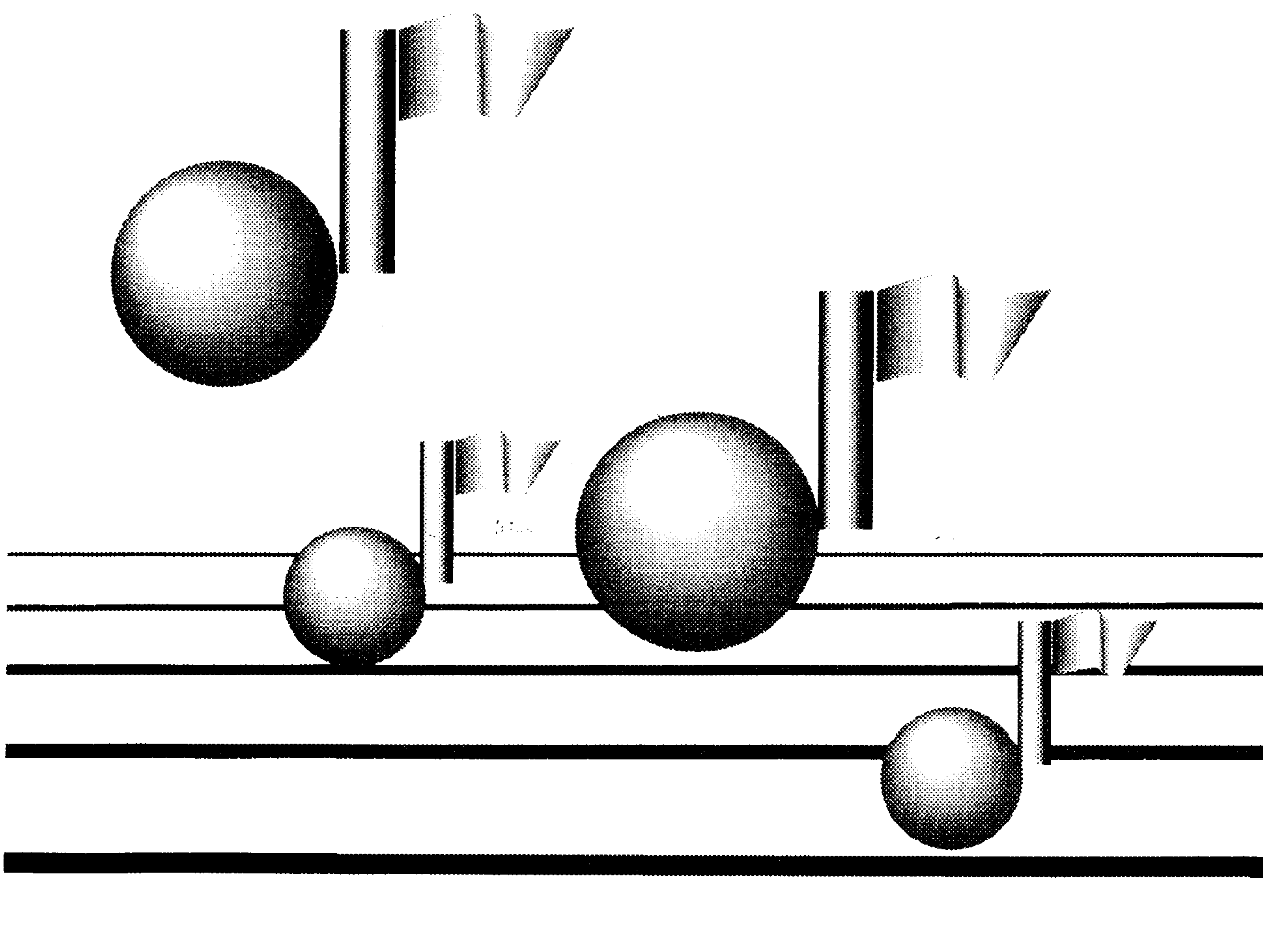
KAWAI

16-bit SYNTHESIZER MODULE

XS-1

Owner's Manual



Thank you for purchasing Kawai 16-bit Synthesizer Module XS-1

The XS-1 uses advanced 16-bit and synthesized waveforms for optimum sound quality at an affordable price. The unique functions found in Kawai's K series professional synthesizers, such as MULTI patch and DRUM SECTION, allow you to create hi-quality musical performances.

Please read this manual thoroughly before using the XS-1. It has been written to allow you to get the most of this instrument's capabilities with the least amount of effort.

FEATURES

128 High Quality Internal Waveforms

The XS-1 has a total of 128 selectable wave combinations. Each combination is made from high-quality 16-bit PCM and DC (Digital Cyclic) waveforms.

MULTI Play Capabilities

4 SINGLE patches may be played at one time using Layer and Split functions, enabling a wide range of warm and expressive sounds.

DRUM SECTION

The XS-1 has its own DRUM SECTION which can be controlled independently from SINGLE patches or the 4 SECTIONs of a MULTI patch.

Variable Multi-Timbral Operation

In the MULTI PLAY Mode, each tone may be set to a specific MIDI channel, allowing the XS-1 to function as though it were four MIDI tone generators. The variable Multi-Timbral function also allows the voice of each section to be played simultaneously.

Care and Maintenance

Proper Care

Your XS-1 is a delicate musical instrument. To prevent breakdowns and ensure years of reliable, trouble-free service, shield it from:

- Direct sunlight and exposure to the elements
- Extremes in temperature or humidity
- Dusty environments
- Vibration... especially during transport

Power Supply

- Use only the AC adaptor shipped with the XS-1 and connect it only to a power supply with a voltage within the limits stated on the ratings plate on the back.
- Make sure that all power switches are off before changing equipment connection.
- Check all equipment connections before applying the power.
- Do not connect to the same circuit with heavy loads or equipment that generates line noise.

Line Noise Reset

The high-speed microprocessor at the core of the XS-1 is extremely sensitive to line noise and sudden fluctuations in the supply voltage. Should it "lock up" under such condition, simply turn the XS-1's power off for a few seconds and then reapply the power.

Cleaning

- Clean the instrument with a soft cloth, a mild detergent, and lukewarm water.
- Never use harsh or abrasive cleansers or organic solvents.

Battery Backup

The lithium battery that protects the memory contents while the power to the unit is off is good for more than five years of normal use. We recommend, however, that you have your nearest authorized service representative replace it promptly after five years.

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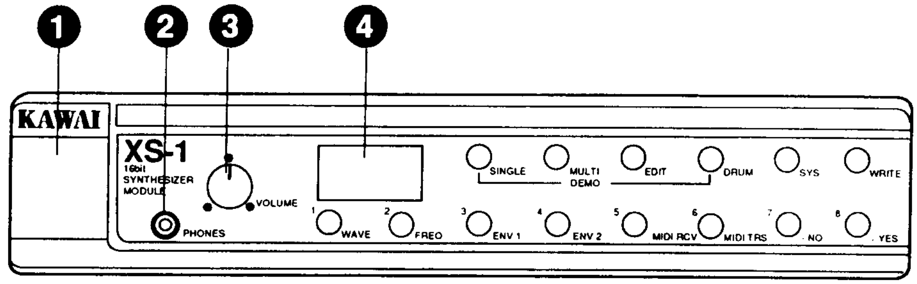
MIDI Implementation Chart 62

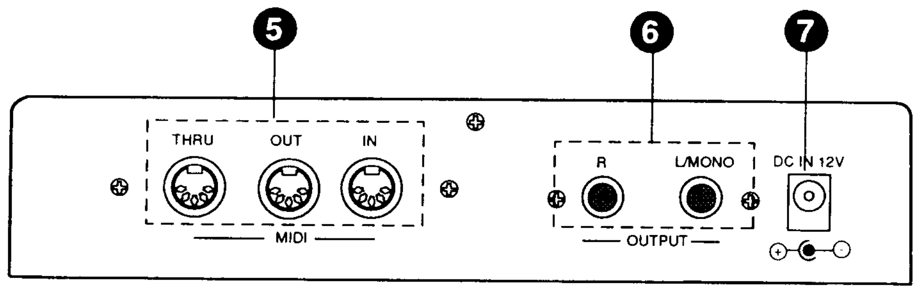
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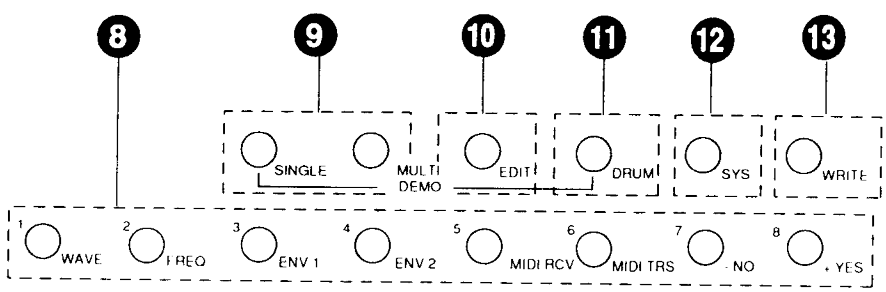
Chapter 1

BASIC OPERATIONS

1. Name of Parts







❶ POWER SWITCH
Turns instrument's power on and off.

❷ HEADPHONE JACK
Stereo headphone can be used with this jack.

❸ VOLUME
Used to adjust the sound output from the PHONES and output (R, L/MONO) jacks.

❹ DISPLAY
Indicates the patch number while playing, the function number, and the value of parameter (alternately) during editing.

❺ MIDI JACKS (IN, OUT, THRU)
These are used to connect XS-1 to other MIDI devices.

❻ OUTPUT JACKS (R, L/MONO)
The output jacks are used to connect the unit to a keyboard amplifier or PA equipment.

❼ DC IN JACK
This jack is used to connect the external AC power adaptor.

❽ PATCH SELECT SWITCH GROUP 2 (1~8)
In PLAY mode:
  Selects a patch number. (See p. 10)
During SINGLE editing:
  Selects the parameters to be edited. (See p. 18)
During MULTI editing:
  Selects a SECTION to be edited. (See p. 27)
In MIDI mode:
  Selects the MIDI parameters to be set. (See p. 38)

❾ PATCH SELECT SWITCH GROUP 1 (MULTI, SINGLE)
Selects between SINGLE and MULTI PLAY modes when selecting patches.

❿ EDIT SWITCH
Puts the XS-1 into the EDIT mode to allow tones to be modified.

⓫ DRUM SWITCH
Puts the XS-1 into the DRUM mode.

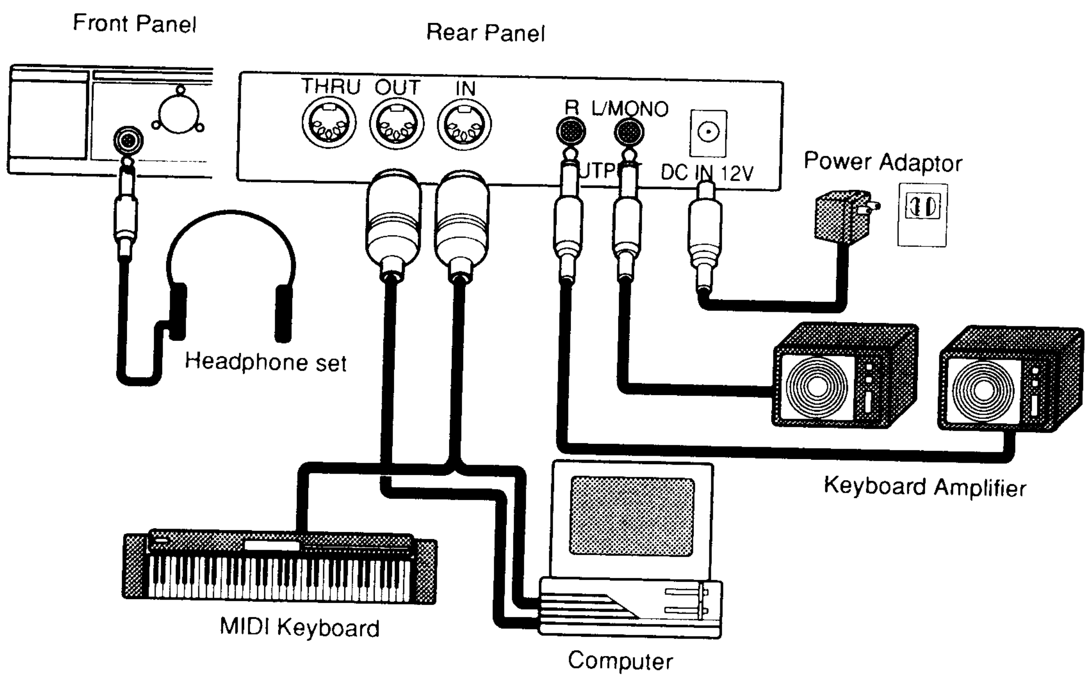
⓬ SYSTEM SWITCH
Puts the XS-1 into the SYSTEM mode.

⓭ WRITE SWITCH
Memorizes edited SINGLE or MULTI patches.

2. Basic Operation

A. Connections

(1) **Connect the power adaptor, any MIDI device and keyboard amp (or headphone) as shown below.**



> ***NOTE:*** *The XS-1 has no internal power amp or speakers. In order to obtain sound output, you may either use headphones, or connect it to a keyboard amp or PA system. It is possible to use home radio cassette players or audio amps, but caution should be paid to when the power is turned on and to volume, etc., in order to avoid damage to these appliances.*

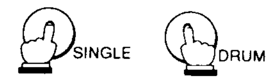
(2) **Turn the POWER switch on. The unit is now ready to play.**

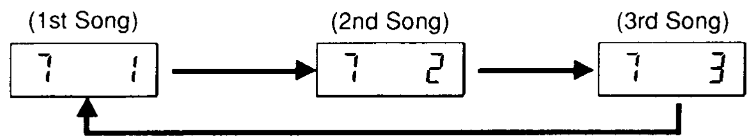
(3) **Turn on the power of amps and other equipment connected to the XS-1 after turning the XS-1 on, to protect the other equipment.**

B. Demonstration Songs

The XS-1 contains 3 demonstration songs which show the musical possibilities of XS-1.
You can hear the songs by following the procedure below:

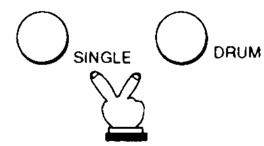
(1) While holding down SINGLE switch, press DRUM switch.
The first demonstration song begins to play.





These 3 songs play successively. After the 3rd song ends, the 1st song begins again.

(2) To skip to the next song before the song ends, simultaneously press SINGLE and DRUM switches.



(3) Press any of the 1 - 8 switches to end the playing.

***NOTE**: Recording these demo songs to tape or any other medium is prohibited by law (except for your personal use).*

C. Selecting a Patch

C-1 SINGLE Patch

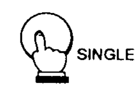
In the XS-1, each single tone color is refered to as a "SINGLE patch".
The XS-1 has in total 96 SINGLE patches, 64 preset SINGLE patches and 32 user patches.

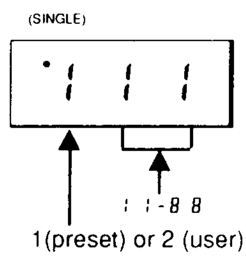
111 - 188	preset SINGLE patches
211 - 248	user SINGLE patches

To select and play a SINGLE patch, use the following procedures.

(1) First press the SINGLE switch to enter the SINGLE PLAY mode.

The LED dot "SINGLE" lights to show that now the XS-1 is in the SINGLE mode, and displays which SINGLE patch is currently selected.



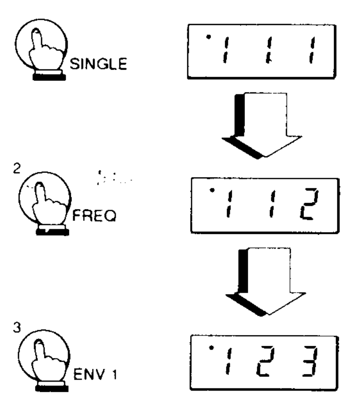


> ***Note:*** *Preset SINGLE patches always have 1 as the first number and user SINGLE patches always have 2 as the first number.*

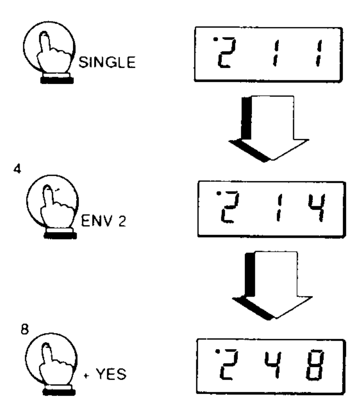
(2) Select a SINGLE patch number.

(a) Select "preset"(1) or "user" (2) by pressing SINGLE switch.
(b) Select a number by pressing two of 1 - 8 switches successively.

(Ex. 1) To select 123 "WURL EP" ...



(Ex. 2) To select 248 "SNARE" ...



(3) Play the keyboard and listen to the sound of the selected SINGLE patch.

C-2 MULTI Patch

A MULTI patch is structured using up to 4 SINGLE patches. These 4 SINGLE patches are combined in "SECTION 1 - 4". Pitch, level, transpose, key zone and MIDI receive channel can be set for each SECTION. MULTI sounds are more colorful and complex than SINGLE patches.

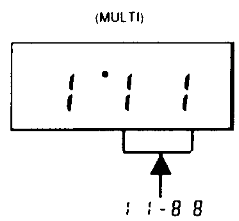
The XS-1 has 16 MULTI patches in total (111 - 118 , 121 - 128).

To select and play a MULTI patch, use the following procedures:

(1) First press the MULTI switch to enter the MULTI PLAY mode.

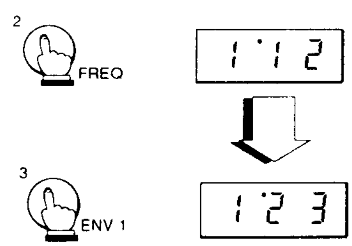
The LED dot "MULTI" lights to show that the XS-1 is now in the MULTI mode, and displays which MULTI patch is currently selected as follows:





(2) Select a MULTI patch number by pressing two of 1 - 8 switches successively.

(Ex. 1) To select 123 "SPLIT 3" ...



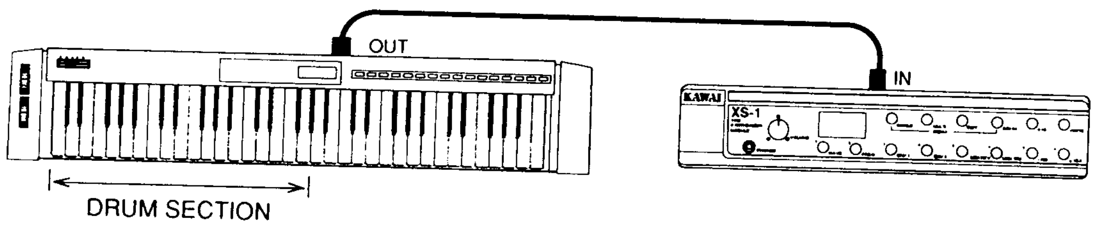
(3) Play the keyboard and listen to the sound of the selected MULTI patch.

MULTI patches contain more numerous and complex settings than SINGLE patches, such as SPLIT and LAYER (See p 27 - 31 "MULTI Patch Editing".) Pressing a few keys may not allow you to completely determine what the MULTI patch consists of. For example, if the patch is SPLIT there will be a bass tone for the left hand and a piano tone for the right. Play the keyboard over a whole range of keys to determine the complexity of each MULTI patch.

D. DRUM SECTION

The DRUM SECTION is a separate programmable section of the XS-1, independent from any SINGLE or MULTI patch.

Drum sounds are programmed for each MIDI note number 36 - 57 (See p. 51 "DRUM SECTION Key Assignment "), and you can play these sounds by sending MIDI note messages from the connected MIDI device (keyboard, sequencer etc.) to XS-1.

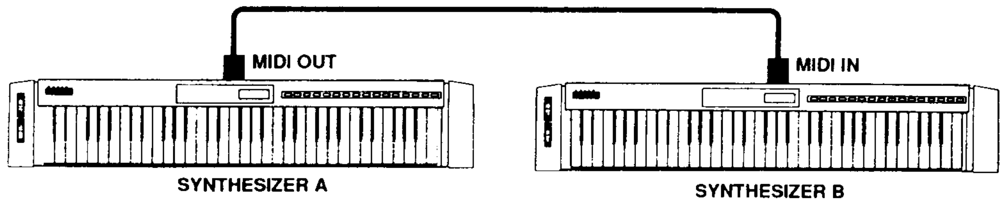


To play the sound of DRUM SECTION, it is necessary to match the MIDI TRANSMIT CHANNEL of connected MIDI device and XS-1's DRUM SECTION RECEIVE CHANNEL (See p. 33 "DRUM EDIT Parameters").

3. Fundamentals of MIDI

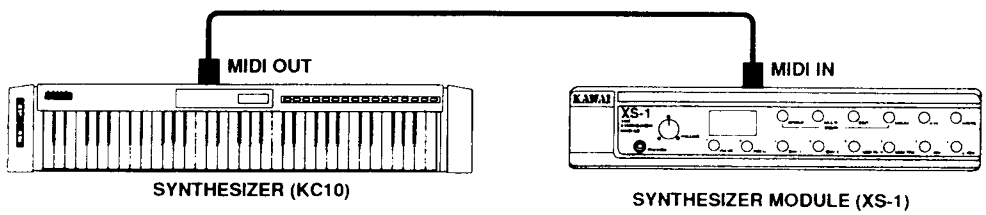
MIDI stands for Musical Instrument Digital Interface, an international standard for connecting synthesizers, drum machines and other electronic instruments so that they can exchange performance data.

(1) Connecting to another synthesizer



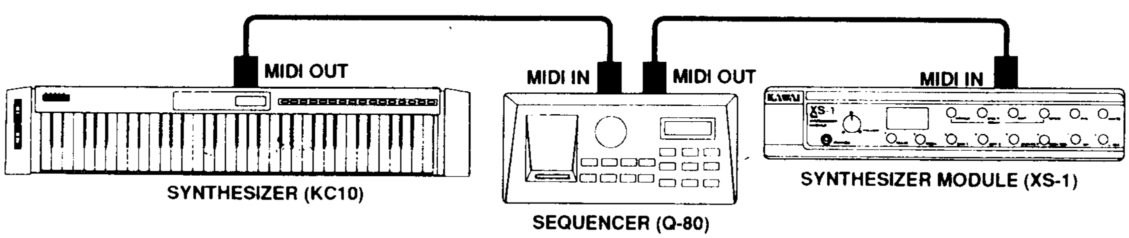
When connected as shown in the illustration, you can generate the sound of synthesizer B by playing the keyboard of synthesizer A, because the MIDI data is transmitted from synthesizer A to synthesizer B.
Since tone color can be set separately, you can assemble a wide variety of sound combinations, such as a PIANO tone from the synthesizer A layered with a STRING tone from the synthesizer B for a deep sound.

(2) Connecting to a synthesizer module



Same as (1), you can transmit MIDI data by playing the synthesizer's keyboard to XS-1 and make sounds from the KC10.

(3) Connecting to a sequencer/synthesizer module



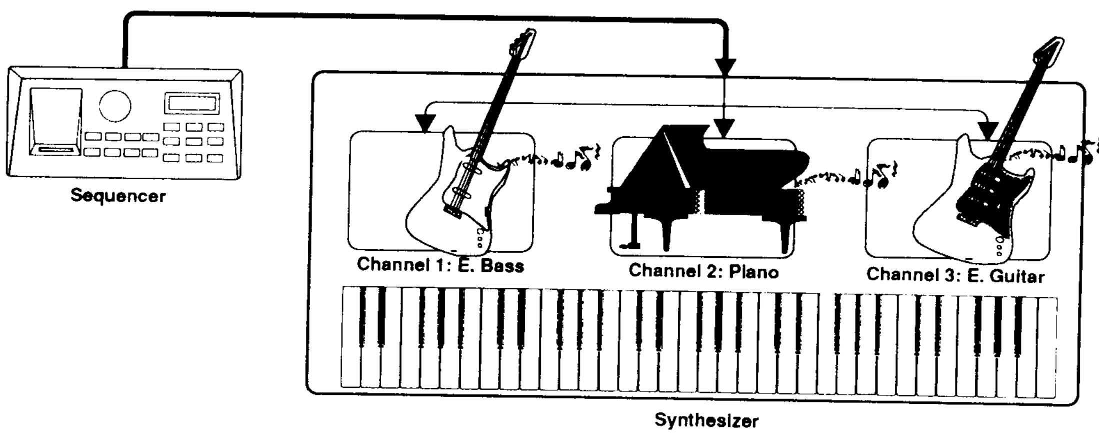
A "Sequencer" is a device which allows you to record and playback MIDI data. On the above setting, if you record MIDI data by playing KC10, you can playback your performance anytime (without playing keyboard again!). It is also possible to play a solo on the KC10 while the Q-80 and XS-1 play a prerecorded accompaniment.

To learn more about working with MIDI, please see the following pages.

MIDI Information

■ MIDI Channel

With MIDI, any number of instruments may be controlled from a single source. Thus, in order to be able to distinguish one instrument from another, it is possible to assign a channel number from 1 - 16 to each instrument. When performance data is transmitted, the channel number is transmitted at the head of the information to identify which instrument the information is intended for.
This number is called the MIDI channel. When the instrument is one which supports multi timbres (i.e., can play multiple patches), you will want to control each part, and MIDI channels will have to be allotted to each part.



■ Mode

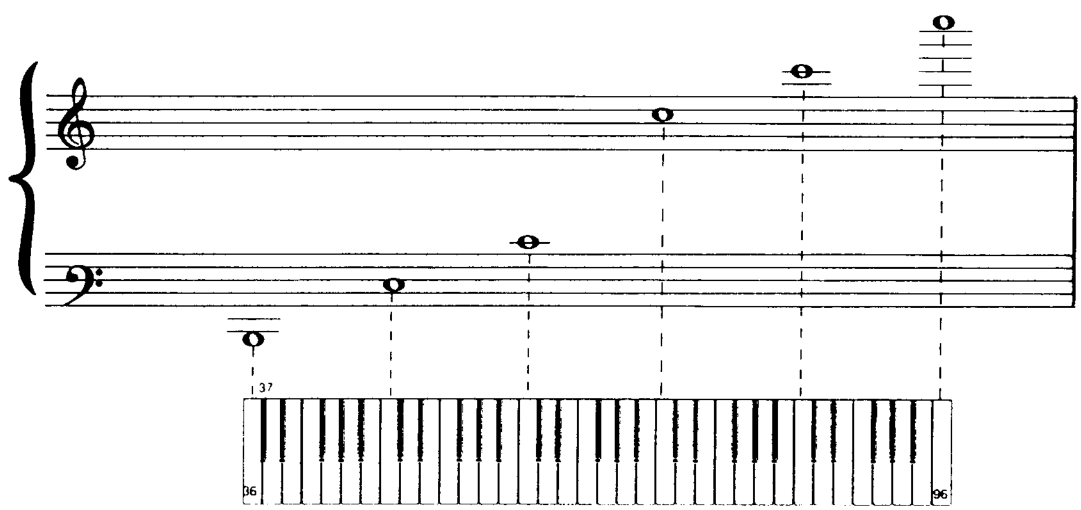
In addition to the channel on which MIDI information is transmitted, information may also be transmitted in different modes. There are both POLY and MONO modes, to determine if the performance data received is to be played polyphonically or monophonically. (XS-1 operates only in the POLY mode.)
Both of these modes may be set for OMNI ON or OMNI OFF, and when set for OMNI ON, information from all MIDI channels may be received and sound produced.

■ Note Information

Of the different types of performance data which can be transmitted via MIDI, the most basic is the note message.
Note messages indicate information such as which key has been pressed (NOTE ON, NOTE Number) with how much force (VELOCITY), and when it was released (NOTE OFF).

- **Note number**

  In order to enable the control instrument to differentiate between keys when they are played, a number is assigned to each, called a note number. Middle C (C3) is MIDI note number 60, and each note number corresponds to a half tone, or one key on the keyboard.
  (MIDI divides the half tones from C-2 to G8 into 128 steps, numbering them in sequence from lowest to highest.)



- **Velocity**

  This is a message which tells with how much force was used when a key on the keyboard was pressed (velocity is detected not by the pressure on the key, but by the speed of its movement at the time the NOTE ON message is sent.)

- **Program Change**

  Most MIDI instruments currently in use allow settings, tones, and other data to be programmed. These programs can be switched by a message from the master instrument. This type of message is called a PROGRAM CHANGE.

  Since MIDI standards require that only numbers from 0 to 127 can be used as PROGRAM CHANGE data, the items in the tone memory that correspond to the PROGRAM CHANGE numbers are different for every type of instrument.

- **Control Change**

  Besides information regarding when a key has been pressed and released and so on, volume, vibrato, hold, portament on/off, damper and soft pedals on/off, pan and after touch information, etc., are functions which may be handled in many different ways as performance data. These are transmitted as CONTROL CHANGE messages.

- **Pitch Bend**

  This is a message which tells exactly how far the pitch bend wheel has been turned. The maximum amount of pitch bend is usually programmed in the synthesizer's patch data. Therefore, pitch range depth may differ between instruments.

- **Exclusive Messages**

  While MIDI is a standard accepted world-wide, in order to get the most out of the different types of equipment produced by different manufacturers, each produces to some extent, their own independent specifications. These are outside of the specifications prescribed by MIDI, and consist of messages for the transmission and reception of information unique to a particular piece of equipment. Called SYSTEM EXCLUSIVE messages, these may be used to exchange tone data between equipment produced by the same manufacturer and for storing tone data to a computer.

Chapter 2

EDIT THE SOUND

"Editing" is the creation or alteration of synthesizer tones and settings.
If you wish to :

- change the XS-1's SINGLE patch sound as you like.
- or to change the structure of MULTI patch's SECTION.

Please read this chapter carefully .

1. SINGLE Patch Editing

A. Editing Operation

To edit a SINGLE patch, it is necessary to enter SINGLE EDIT mode by pressing the EDIT switch.

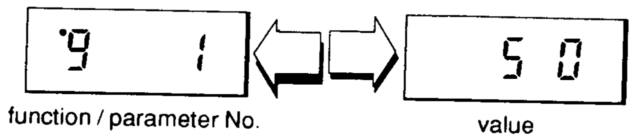
Basic Operation

(1) Select the SINGLE patch you want to edit (See p. 10).

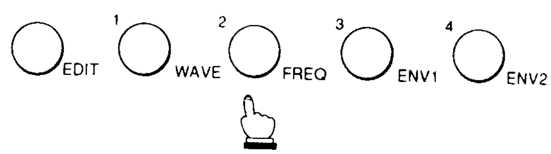
(2) Press the EDIT switch to enter the SINGLE EDIT mode.

The LED shows the function/parameter number and its value alternately.

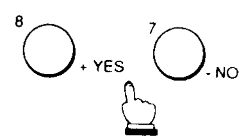




(3) Call up the function / parameter by pressing one of the EDIT, WAVE, FREQ, ENV1, ENV2 switches. (See p. 19)



(4) Change the parameter's value with + YES and - NO switches.
(If you have any other parameters to be edited, repeat (3) and (4).)



(5) Write the edited SINGLE patch (See p. 26).



B. SINGLE Edit Parameters

There are 5 groups of function / parameter in the XS-1's SINGLE EDIT mode. Each group consists of functions of similar character so you can easily understand what function you should call up to make your desired change on a SINGLE patch.

The following table shows all the XS-1's SINGLE EDIT parameters:

	Function No. / Name		Value Range	Ref. Page
EDIT Group	9 1	VOLUME	0 - 63	p.20
	9 2	KEY FIX	0 or 1	p.20
	9 3	FIXED KEY No.	24 - 108	p.20
WAVE Group	1 0 1	WAVE SELECT	1 - 128	p.21
	1 0 2	SOLO ON/OFF	0 or 1	p.21
FREQ Group	1 1 1	VIBRATO SPEED	0 - 31	p.21
	1 1 2	VIBRATO DEPTH	0 - 31	p.21
	1 1 3	VIBRATO SHAPE	1 / 2 / 3 / 4	p.22
	1 1 4	AUTO BEND TIME	0 - 31	p.22
	1 1 5	AUTO BEND DEPTH	± 31	p.22
ENV1 / 2 Group	1 2 1 / 1 3 1	LEVEL	0 - 31	p.23
	1 2 2 / 1 3 2	ATTACK TIME	0 - 31	p.24
	1 2 3 / 1 3 3	DECAY TIME	0 - 31	p.24
	1 2 4 / 1 3 4	SUSTAIN LEVEL	0 - 31	p.24
	1 2 5 / 1 3 5	RELEASE TIME	0 - 31	p.25
	1 2 6 / 1 3 6	KS ENVELOPE LEVEL	± 15	p.25
	1 2 7 / 1 3 7	VELOCITY CURVE	0 / 1 / 2 / 3	p.25

EDIT Group

9 1 VOLUME

Controls the whole volume of SINGLE patch.
The differences in volume between patches are adjusted to avoid any unnaturalness when switching between patches.

Value	Effects
0	Minimum Level
:	
:	
63	Maximum Level

9 2 KEY FIX

Selects whether pitch is to change depending on the key struck.
The keys scale is normally set to OFF (0), but will be fixed at the pitch specified by FIXED KEY NO. when ON (1).

Value	Effects
0	ON
1	OFF

9 3 FIXED KEY NO.

Sets the pitch of the SINGLE patch to a particular pitch.

Value	Effects
0	C0
:	
:	
108	C7

WAVE Group

101 WAVE

Selects the desired waveform from the 128 waveforms available.

Value	Effects
1	Wave No. 1
:	
128	Wave No. 128

NOTE: *See WAVE LIST (p.59) for available waveforms.*

102 SOLO ON / OFF

Sets the way the SINGLE patch is to sound, polyphonic or monophonic (SOLO).

Value	Effects
0	OFF
1	ON

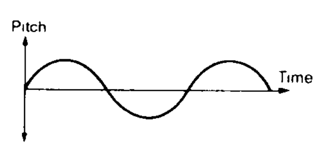
NOTE: *When set to off (0), 10 - note polyphony is available.*

FREQ Group

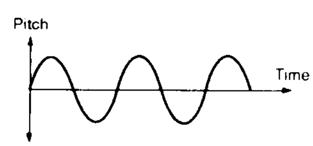
111 VIBRATO SPEED

Sets the vibrato speed.

Value	Effects
0	Slow Vibrato
:	
31	Rapid Vibrato



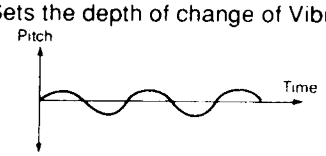
Slow vibrato

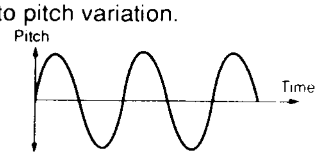


Rapid vibrato

112 VIBRATO DEPTH

Sets the depth of change of Vibrato pitch variation.



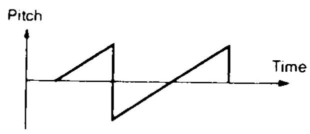


Value	Effects
0	No Vibrato
:	
31	Maximum Vibrato

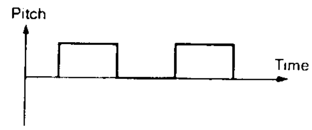
NOTE: *The amount of time after a key is pressed until vibrato takes effect can be set with AUTO BEND TIME (114).*

113 VIBRATO SHAPE

Sets how the pitch is to be shaped.



Sawtooth (SAW)

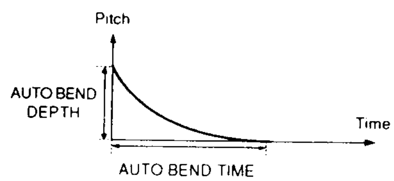


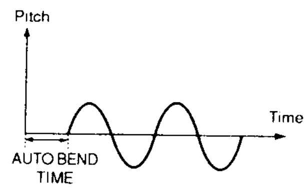
Square (SQR)

Value	Effects
1	TRI
2	SAW
3	SQR
4	RND Random variation

114 AUTO BEND TIME

Sets the time for the AUTO BEND (automatic bend) function and the delay before the start of the VIBRATO effect (see 112).

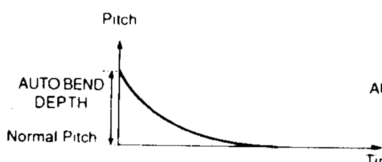




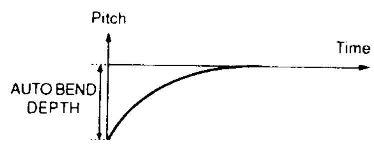
Value	Effects
0	No effect
:	
:	
31	Maximum Period

115 AUTO BEND DEPTH

Sets how the pitch alters as each key is struck.



Positive depth



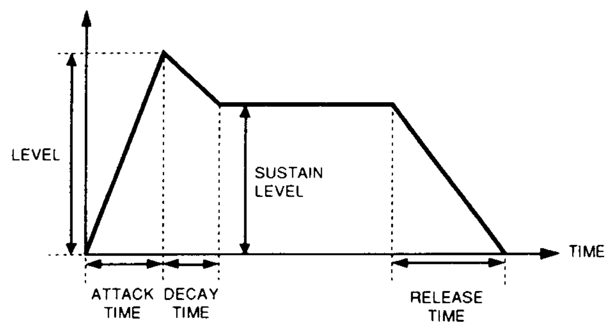
Negative depth

Value	Effects
0	No effect
:	
:	
31	Maximum Period

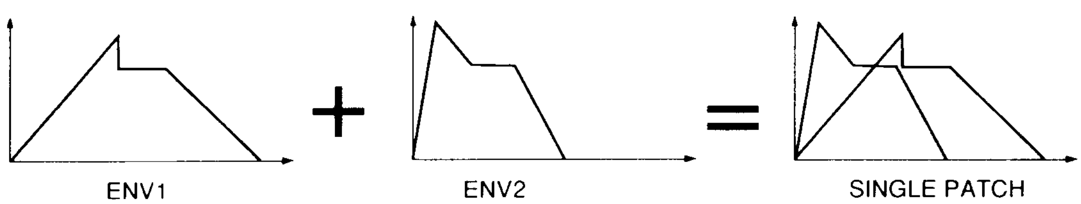
ENV1 (ENV2) Group

The parameters in this group determine the "envelope" , the way the volume of a sound changes with time.

For example, a note on a piano begins to fade immediately after you strike it, but one on an organ stays at the same volume until you release the key. The graph below defines the five phrases of the envelope.

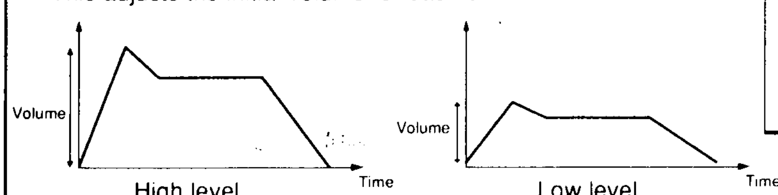


The XS-1 allows you to set 2 different envelopes (ENV1 and ENV2) for one SINGLE patch, and make a complex sound by mixing them.



121 131 **LEVEL**

This adjusts the initial volume for each of ENV1 and ENV2.

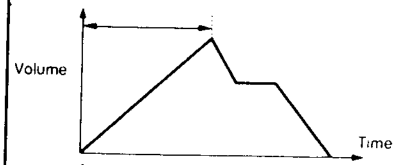


Value	Effects
0	No Output
:	
:	
31	Maximum Level

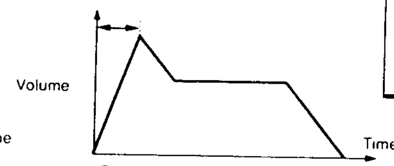
122 132 ATTACK TIME

Sets the time from the start of the sound until the peak volume is reached (for each of ENV1 and ENV2).

Value	Effects
0	Short Attack
:	
31	Long Attack



Long Attack (leisurely rise)

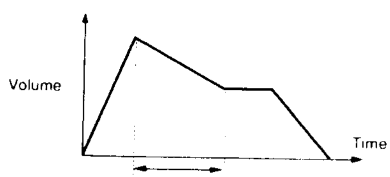


Short Attack (quick rise)

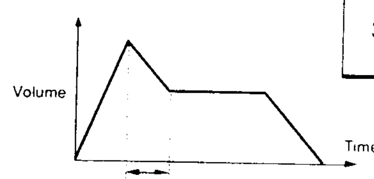
123 133 DECAY TIME

Sets the time from peak volume to the sustain level (for each ENV).

Value	Effects
0	Short Decay
:	
31	Long Decay



Long Decay

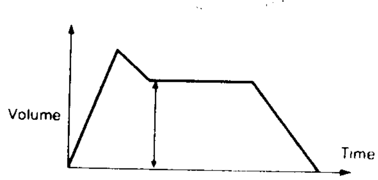


Short Decay

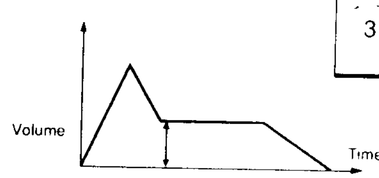
124 134 SUSTAIN LEVEL

Sets the stable level which will be maintained as long as the key is held down (for each ENV).

Value	Effects
0	Low Sustain
:	
31	High Sustain



High sustain level (e.g. organ)

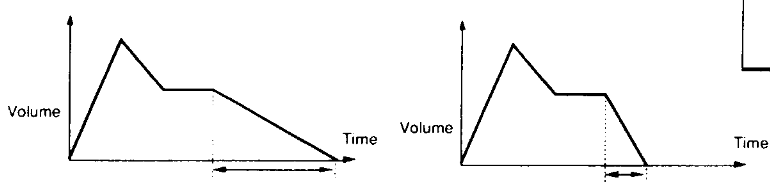


Low sustain level (e.g. piano)

125 | 135 | RELEASE TIME

Sets the time from the point when the key is released until the sound disappears (for each ENV).

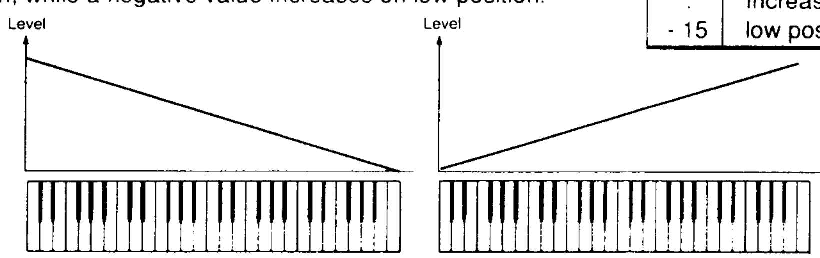
Value	Effects
0	Short Release
:	
:	
31	Long Release



126 | 136 | KS(KEY SCALING) ENVELOPE LEVEL

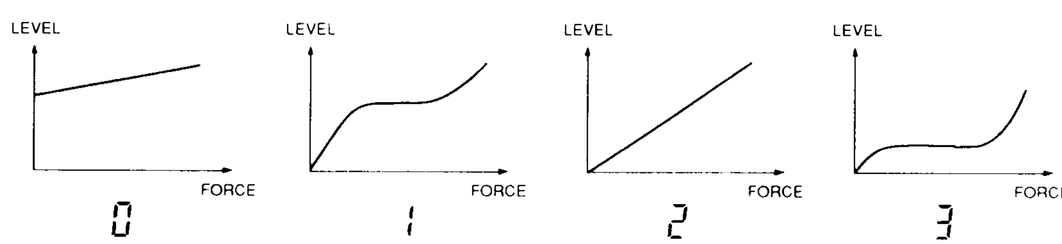
Changes the volume level according to the position (high or low note) of the struck key (for each ENV).
Setting a positive value (+1 to +15) increases the volume on high position, while a negative value increases on low position.

Value	Effects
+ 15	Increase the volume on
:	high position
0	No effect
:	Increase the volume on
- 15	low position



127 | 137 | VELOCITY CURVE

You can select the way in which volume is changed by how hard the key is struck, choosing from the following 4 curves.



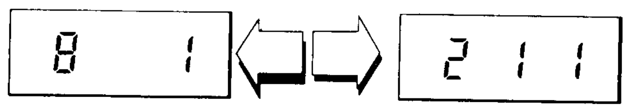
C. Writing an Edited SINGLE Patch

If you wish to store the edited SINGLE patch, write it to one of 32 user SINGLE patches with the following procedures.

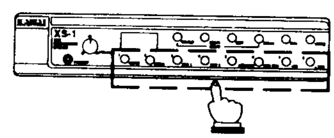
(1) After finishing editing, press the WRITE switch.

LED begins to show the WRITE function number (8 1) and user SINGLE patch number alternately.





(2) Select one patch number (for storage) using 1 - 8 switches.
(See p. 10 "**C-1 SINGLE Patch**")



(3) Press WRITE switch again.

LED shows selected patch number and the XS-1 returns to SINGLE PLAY mode.



> ***NOTE:*** *This procedure erases the data previously stored in the selected patch.*
> *If you wish to recall the factory - preset SINGLE patch data, use the RESET procedure (See p. 47).*

2. MULTI Patch Editing

A. Editing Operation

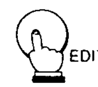
To edit a MULTI patch, it is necessary to enter the MULTI EDIT mode by pressing the EDIT switch.

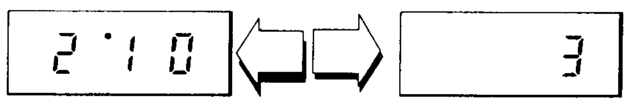
Basic Operation

(1) **Select the MULTI patch you wish to edit** (See p. 11).

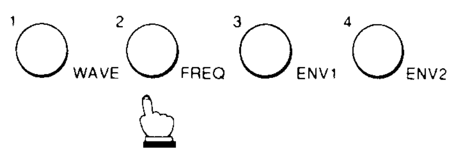
(2) **Press the EDIT switch to enter the MULTI EDIT mode.**

The LED shows the function / parameter number and its value alternately.

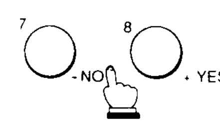




(3) **Call up the SECTION and its function / parameter by continuing to press one of the 1 - 4 switches.** (See p. 28)



(4) **Change the parameter's value with the + YES and - NO switches.**
(If you have any other SECTION to be edited, repeat (3) and (4).)



(5) **Write the edited MULTI patch** (See p.31).

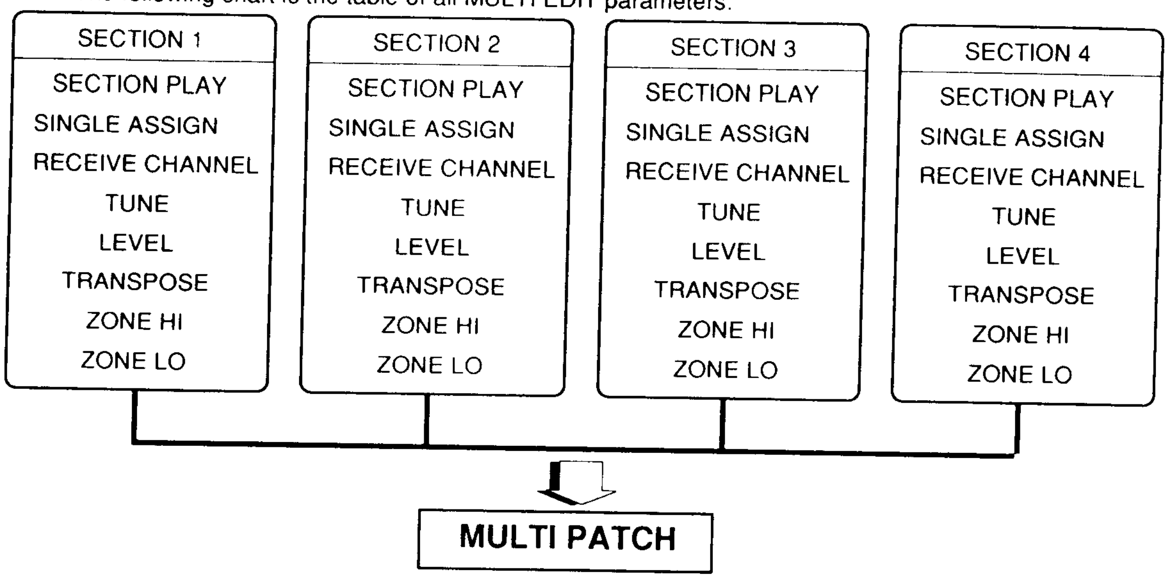


B. MULTI Edit Parameters

A MULTI patch is a combination of up to 4 SINGLE patches. Each of the 4 SINGLE patches are used in SECTIONs 1 - 4.

MULTI patches have no parameters for creating tones - MULTI EDIT parameters are used to set how the tone of each SECTION is to be played.

The following chart is the table of all MULTI EDIT parameters:



Function No. / Name		Value	Ref. page
2 ※ 0	SECTION PLAY	0 / 1	p.29
2 ※ 1	SINGLE ASSIGN	111 - 248	p.29
2 ※ 2	RECEIVE CHANNEL	1 - 16	p.29
2 ※ 3	TUNE	± 10	p.29
2 ※ 4	LEVEL	0 - 31	p.30
2 ※ 5	TRANSPOSE	± 12	p.30
2 ※ 6	ZONE HI	36 - 96	p.30
2 ※ 7	ZONE LO	36 - 96	p.30

Though these parameters are the same for each of SECTIONs 1 - 4, the LED displays the different numbers to show which SECTION is now edited (as follows):

SECTION 1	SECTION 2	SECTION 3	SECTION 4
2 1 0	2 2 0	2 3 0	2 4 0

This chapter explains the details of MULTI EDIT parameters using SECTION 1 as an example.

2 1 0 SECTION PLAY

Sets the way the SECTION is to be played.

OFF: The SECTION produces no sound
ON: Produces sound when receiving MIDI data from external MIDI device

Value	Effects
0	OFF
1	ON

2 1 1 SINGLE ASSIGN

Selects a SINGLE patch to be played in each SECTION.

Value	Effects
111	SINGLE Patch No. 111
:	
248	SINGLE Patch No. 248

2 1 2 RECEIVE CHANNEL

Sets the MIDI receive channel for each SECTION.

NOTE: *If you use DRUM SECTION with MULTI patch, be sure not to match the DRUM SECTION RECEIVE CHANNEL (See p.33) and each SECTION's RECEIVE CHANNEL.*

Value	Effects
1	Channel 1
:	
16	Channel 16

When you set different MIDI receive channels for each SECTION with this parameter, you can play an ensemble performance using only the XS-1 and a sequencer / computer (See p. 46 "Playing using a Sequencer / Computer").

2 1 3 TUNE

Performs fine tuning for SECTION pitch.
You can create a thicker sound by slightly varying the pitches of several SECTIONs with the same tone.

Value	Effects
-10	Semitone Lower
:	
0	Standard Pitch
:	
+10	Semitone Higher

214 LEVEL

Sets the volume level for each SECTION.

Value	Effects
0	Minimum Level
:	
:	
31	Maximum Level

215 TRANSPOSE

This transposes the pitch of the SECTION up and down in half steps.
By layering a SECTION in normal pitch with SECTION transposed by 5 or 12 half steps, you can play harmonies in a 5th or a full octave with one finger.
Setting can be made within a range of two octaves.

Value	Effects
-12	Octave Lower
:	
0	Standard Pitch
:	
+12	Octave Higher

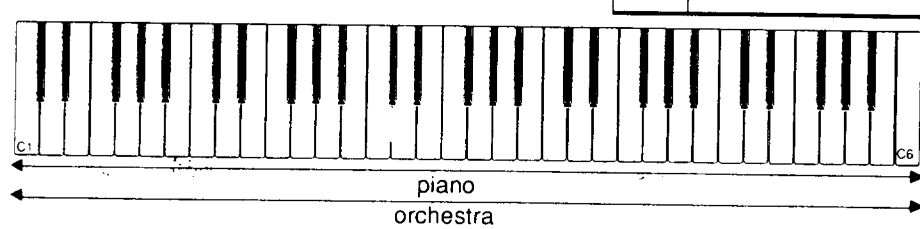
216 ZONE HI 217 ZONE LO

Set the upper and lower limits for the tone range of the SECTION.

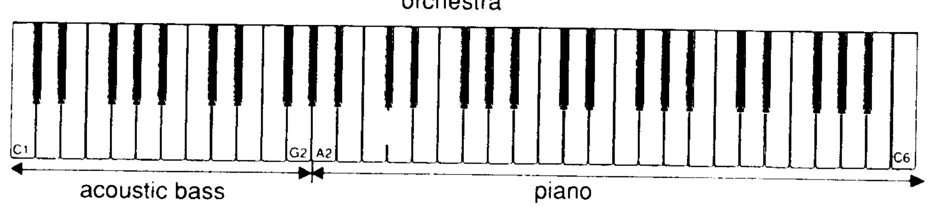
By using these two parameters, a "Layer" (combining two or more sounds into one) or "Split" (dividing a keyboard into several zones, assigning a different sound for each) can be created as follows:

Value	Effects
36	C1
:	
:	
96	C6

Layer



Split



Note: *When setting ZONE HI value as "96 (C6)", the upper range (C#1 - C7) can also be played. And when setting ZONE LO value as "36 (C1)", the lower range (C0 - B0) can also be played.*

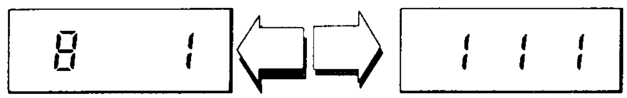
C. Writing an Edited MULTI Patch

If you wish to store the edited MULTI patch, write it in one of 16 MULTI patch locations using the following procedures.

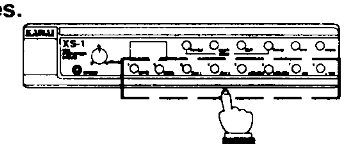
(1) After finishing editing , press the WRITE switch.



LED begins to show the WRITE function number 8 1 and patch number alternately.



(2) Select one patch number (for storage) using the 1 - 8 switches.
(See p.11 "**C-2 MULTI Patch**")



(3) Press WRITE switch again.

LED shows selected patch number and XS-1 returns to MULTI PLAY mode.



> ***NOTE:*** *This procedure erases the data previously stored in the selected patch. If you wish to recall the factory-preset MULTI patch data, use the RESET procedure (See p. 47).*

3. DRUM Editing

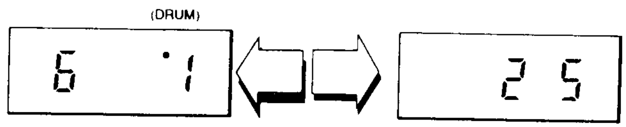
A. Editing Operation

Enter the DRUM EDIT mode to change the settings of the DRUM SECTION using the procedures below.

(1) **First press the DRUM switch to enter the DRUM EDIT mode.**
(See p.12)



The LED shows the function / parameter number and its value alternately.



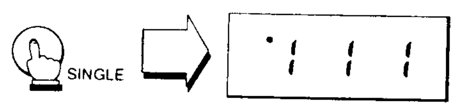
function / parameter No. Value

(2) **Press the DRUM switch repeatedly until the desired function number appears.** (See the parameter chart on the next page.)

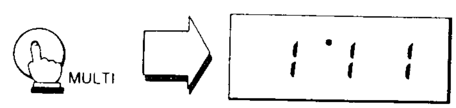


(3) **Change the parameter's value with +YES and - NO switches.**
(Repeat (2) and (3) to change all parameters you desire.)

(4) **To leave the EDIT mode:**
(a) Press SINGLE switch →
returns to SINGLE PLAY mode.



(b) Press MULTI switch →
returns to MULTI PLAY mode.



B. DRUM Edit Parameters

Function No. / Name			Value	Ref. page
6	1	DRUM VOLUME	0 - 31	p.
6	2	DRUM SECTION RECEIVE CHANNEL	1-16	p.

6 1 DRUM VOLUME

Sets the entire volume of the DRUM SECTION. (p. 12)

Value	Effects
0	Minimum Volume
:	
31	Maximum Volume

6 2 DRUM SECTION RECEIVE CHANNEL

Sets the MIDI RECEIVE CHANNEL of DRUM SECTION.

NOTE: *If you use DRUM SECTION with MULTI patch, be sure not to match the DRUM SECTION RECEIVE CHANNEL and each SECTION's RECEIVE CHANNEL. (See p. 29)*

Value	Effects
1	Channel 1
16	Channel 16

Chapter 3

OTHER SETTINGS

1. SYSTEM Setting

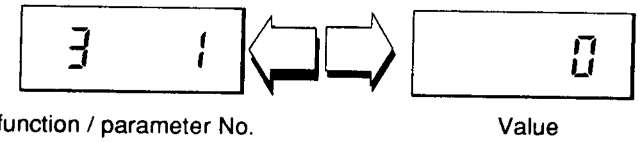
In the SYSTEM mode you can set the values that affect the entire XS-1 unit.

To set or change the SYSTEM setting, it is necessary to enter SYSTEM mode.

(1) Press the SYS (SYSTEM) switch to enter the SYSTEM mode.

The LED shows the function / parameter number and its value alternately.

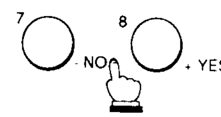




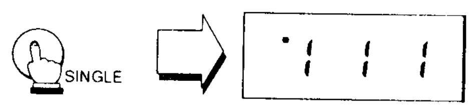
(2) Press SYS switch again until the desired function number appears.



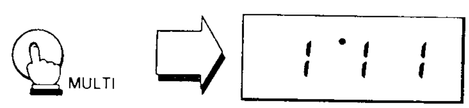
(3) Change the parameter's value with +YES and - NO switches.
(Repeat (2) and (3) to change all parameters you need.)



(4) To leave the SYSTEM mode:
(a) Press SINGLE switch →
Returns to SINGLE PLAY mode.



(a) Press MULTI switch →
Returns to SINGLE PLAY mode.



3 1 SYSTEM TUNE

Adjusts the XS-1's master tuning.

NOTE:*Turning the XS-1's power off resets the TUNE value to 0 (Standard pitch).*

Value	Effects
- 10	Semitone Lower
:	
0	Standard Pitch
:	
+ 10	Semitone Higher

3 2 SYSTEM TRANSPOSE

Shifts the pitch of all notes up or down in semitone increments.

Value	Effects
- 12	Octave Lower
:	
0	Standard Pitch
:	
+ 12	Octave Higher

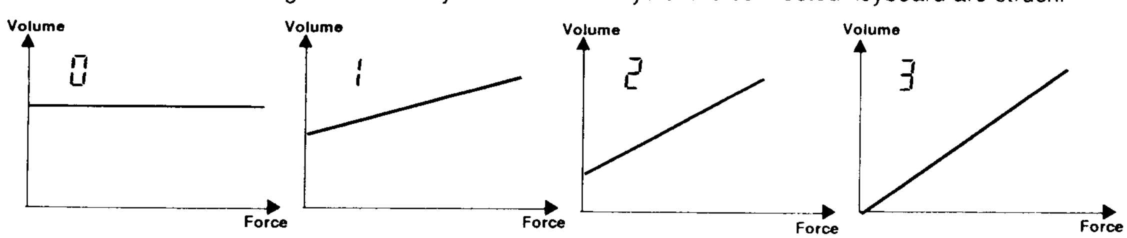
3 3 BENDER RANGE

Sets the amount of PITCH BEND when using PITCH BEND wheel of a MIDI keyboard connected to XS-1

Value	Effects
0	No effect
:	
:	
7	Range of 7 semitones

3 4 VELOCITY DEPTH

Sets the amount of change in volume by how hard the keys of the connected keyboard are struck.



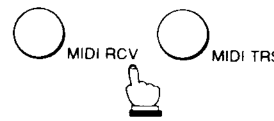
2. MIDI Setting

To use the XS-1 with other external MIDI equipment, set the XS-1's MIDI functions as needed. Use MIDI RCV (receive) and MIDI TRS (transmit) modes to set these parameters.

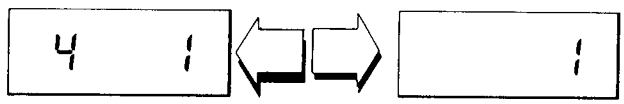
(1) **Enter SYSTEM mode.** (See p. 36)



(2) **Press MIDI RCV or MIDI TRS switch to enter the MIDI RCV (or TRS) MODE.**

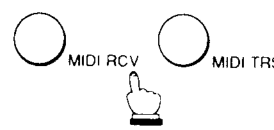


The LED shows the function / parameter number and its value alternately.



function / parameter No. Value

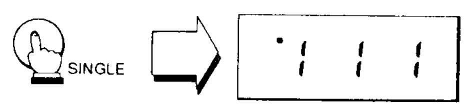
(3) **Press MIDI RCV (TRS) again until the desired function number appears.** (See the following parameter chart.)



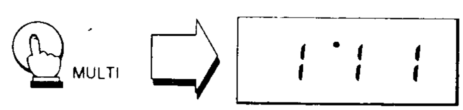
(4) **Change the parameter's value with + YES and - NO switches.**
(Repeat (3) and (4) to change all parameters you need.)

(5) **To leave the MIDI RCV (TRS) mode:**

(a) Press SINGLE switch
returns to SINGLE PLAY mode.



(b) Press MULTI switch
returns to MULTI PLAY mode.



	Function No. / Name			Value Range	Ref. page
MIDI RCV Parameters	4	1	RECEIVE CHANNEL	1 - 9, 11 - 16	p.39
	4	2	OMNI ON / OFF	0 or 1	p.39
	4	3	RECEIVE PROGRAM CHANGE	0 / 1 / 2	p.40
	4	4	RECEIVE PITCH BEND	0 or 1	p.41
	4	5	RECEIVE MODULATION	0 or 1	p.42
	4	6	RECEIVE VELOCITY	0 or 1	p.42
	4	7	RECEIVE EXCLUSIVE	0 or 1	p.42
MIDI TRS Parameters	5	1	TRANSMIT CHANNEL	1 - 16	p.42
	5	2	TRANSMIT PROGRAM CHANGE	0 or 1	p.43
	5	3	ONE PATCH DATA DUMP (SINGLE / MULTI)	-	p.43
	5	4	ALL SINGLE DATA DUMP	-	p.44
	5	5	ALL MULTI DATA DUMP	-	p.44
	5	6	DRUM DATA DUMP	-	p.45

MIDI RCV Parameters

4 1 RECEIVE CHANNEL

Sets the MIDI channel (1 - 16) on which the XS-1 will receive MIDI data from external equipment.

Value	Effects
1	Channel 1
:	
16	Channel 16

4 2 OMNI ON / OFF

Selects OMNI (See p. 14) on or off.
If OMNI is on, data received on any channel will be received and played in SINGLE mode.

Value	Effects
0	OFF
1	ON

4 3 RECEIVE PROGRAM CHANGE

Selects whether a PROGRAM CHANGE is to be recognized.
The correspondence between XS-1's SINGLE / MULTI patch numbers and PROGRAM CHANGE numbers are shown in the chart:

Value	Effects
0	OFF
1	NORMAL
2	SECTION

OFF: All data will be ignored.
NORMAL: Switches between SINGLE patches (0 to 95) and MULTI patches (96 to 111).
SECTION: Remains in MULTI mode and switches between SINGLE patches within the 4 MULTI patch SECTIONs which have matching MIDI channels.

		1	2	3	4	5	6	7	8
SINGLE(preset)	1 1	0	1	2	3	4	5	6	7
	1 2	8	9	10	11	12	13	14	15
	1 3	16	17	18	19	20	21	22	23
	1 4	24	25	26	27	28	29	30	31
	1 5	32	33	34	35	36	37	38	39
	1 6	40	41	42	43	44	45	46	47
	1 7	48	49	50	51	52	53	54	55
	1 8	56	57	58	59	60	61	62	63
SINGLE (user)	2 1	64	65	66	67	68	69	70	71
	2 2	72	73	74	75	76	77	78	79
	2 3	80	81	82	83	84	85	86	87
	2 4	88	89	90	91	92	93	94	95
MULTI	1 1	96	97	98	99	100	101	102	103
	1 2	104	105	106	107	108	109	110	111

When you play a MULTI patch with a sequencer or computer, setting "2" (SECT) allows you to change the SECTION's SINGLE assignment automatically while playing a song.

(Example)
If you wish to change the SECTION 4 (MIDI RECEIVE CHANNEL: 4) from 111"PIANO 1" to 123 "WURL EP"................

SECTION 1	SECTION 2	SECTION 3	SECTION 4
SYN BASS	SPACE STRINGS	TENOR SAX	PIANO 1
MIDI CH: 1	MIDI CH: 2	MIDI CH: 3	MIDI CH: 4

Send PROGRAM CHANGE number "10" from a sequencer / computer according to MIDI transmit channel 4.

SECTION 1	SECTION 2	SECTION 3	SECTION 4
SYN BASS	SPACE STRINGS	TENOR SAX	WURL EP

4 4 RECEIVE PITCH BEND

Selects whether PITCH BEND data is to be recognized.

Value	Effects
0	OFF
1	ON

4 5 RECEIVE MODULATION

Selects whether MODULATION data is to be recognized.

Value	Effects
0	OFF
1	ON

4 6 RECEIVE VOLUME

Selects whether VOLUME data is to be recognized.

Value	Effects
0	OFF
1	ON

4 7 RECEIVE EXCLUSIVE

Selects whether EXCLUSIVE data is to be recognized.

Value	Effects
0	OFF
1	ON

MIDI TRS Parameters

5 1 TRANSMIT CHANNEL

Sets the MIDI channel (1 - 16) on which the XS-1 transmits MIDI data.

Value	Effects
1	Channel 1
:	
:	
16	Channel 16

S 2 — TRANSMIT PROGRAM CHANGE

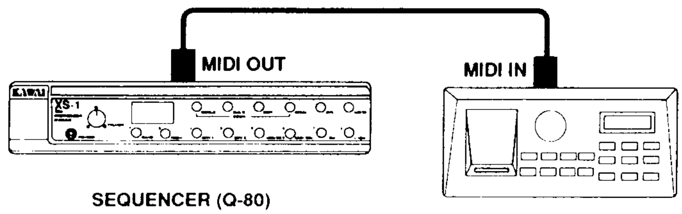
Selects whether PROGRAM CHANGE data is to be transmitted.

NOTE: When selecting ON, XS-1 can transmit PROGRAM CHANGE data to connected external equipment, by selecting a SINGLE or MULTI patch from the front panel. *(See p.10, 11)*

Value	Effects
0	OFF
1	ON

DATA DUMP

The XS-1 can transmit/receive its SINGLE /MULTI patch data and DRUM SECTION data to/from another external MIDI device. If you use a MIDI sequencer (ex. KAWAI Q-80) as a MIDI data recorder, you can store your original patch data on it with the following "DATA DUMP" procedures.



SEQUENCER (Q-80)

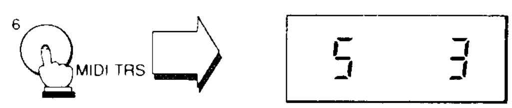
S 3 — ONE PATCH DATA DUMP (SINGLE / MULTI)

Transmits the data of the one patch currently selected.

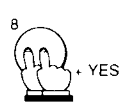
Procedure

(1) Select a SINGLE or MULTI patch to be transmitted (in SINGLE / MULTI PLAY mode - See p.10, 11)

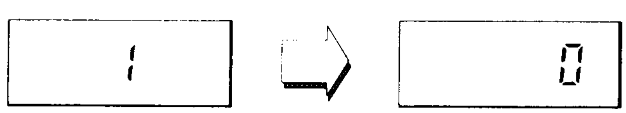
(2) Enter the SYSTEM mode and call the function < S 3 > by pressing the MIDI TRS (6) switch several times.



(3) Press +YES switch twice.



The LED indicates the value 1 during the transmission, and shows 0 after completion.

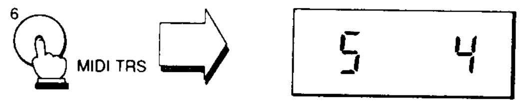


5 4 — ALL SINGLE DATA DUMP

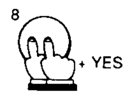
Transmits the data of 32 user SINGLE patches at once.

Procedure

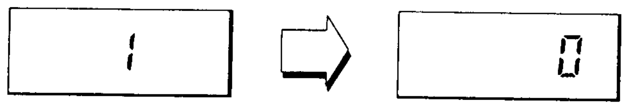
(1) Enter the SYSTEM mode and call the function < 5 4 > by pressing the 6 switch repeatedly.



(2) Press +YES switch twice.



The LED indicates the value 1 during the transmission, and shows 0 after completion.

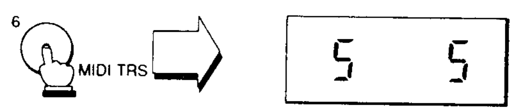


5 5 — ALL MULTI DATA DUMP

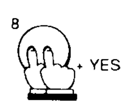
Transmits the data of 16 MULTI patches at once.

Procedure

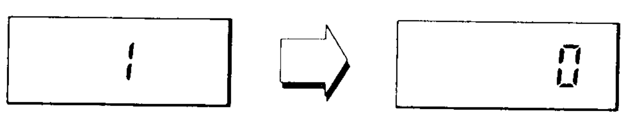
(1) Enter the SYSTEM mode and call the function < 5 5 > by pressing the 6 switch repeatedly.



(2) Press +YES switch twice.



The LED indicates the value 1 during the transmission, and shows 0 after completion.

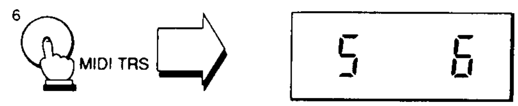


5 6 DRUM DATA DUMP

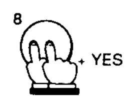
Transmits the data of DRUM SECTION key assignment.

Procedure

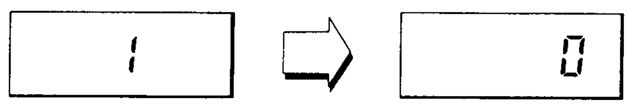
(1) Enter the SYSTEM mode and call the function < 5 6 > by pressing the 6 switch repeatedly.



(2) Press +YES switch twice.



The LED indicates the value 1 during the transmission, and shows 0 after completion.



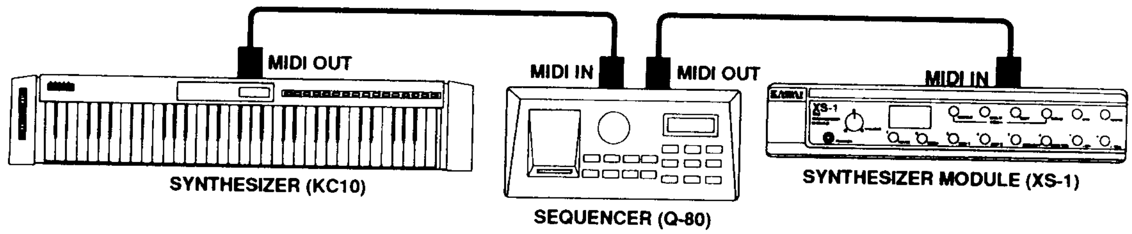
3. Playing Using A Sequencer / Computer

With the MULTI mode, the XS-1 can function as a multiple sound module with up to 4 (5 using DRUM SECTION) parts. This means that an extremely simple setup such as XS-1 and a MIDI sequencer (ex: KAWAI Q-80) or computer can produce an extensive range of sounds.

Use the procedure shown below to connect a MIDI sequencer for performance.

A. MIDI Sequencer Connection

In this example, a Kawai Q-80 is used as a sequencer. Connect it to the XS-1 as shown in the illustration.



Note: *Set your sequencer to ECHO THRU to hear sound from the synthesizer while playing the keyboard.*

B. MULTI Setting

Decide what SECTIONs will be played, and what tones and MIDI channels they will use.

Here we will use the MULTI patch No. 111 "SEQ1" which is preset.

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E. PIANO	BRASS	STRINGS
MIDI CH: 1	MIDI CH: 2	MIDI CH: 3	MIDI CH: 4

NOTE: *In this case, please set the DRUM SECTION RECEIVE CHANNEL (p. 33) as "10".*

C. Recording

(1) **Set the MIDI keyboard's MIDI TRANSMIT to channel " 1 ".**

(2) **Play the keyboard and you will hear the BASS sound.**

(3) **Change the TRS channel to " 2 "** — you can play the E. PIANO sound.
And after change to " 3 " — you can play the BRASS sound.
And after change to " 4 " — you can play the STRINGS sound.
And after change to " 10 " — you can play the DRUM SECTION.

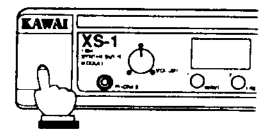
(4) **Start the recording to the sequencer with changing MIDI TRS channel and sequencer's recording tracks.**

NOTE: *When recording, be sure not to use more notes simultaneously than the XS-1's maximum polyphony (MULTI PATCH: 10, DRUM SECTION: 4).*

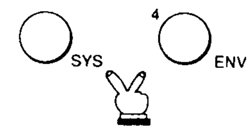
4. RESET Operation

If you wish to recall the factory - preset SINGLE / MULTI patch data, use the following RESET procedure.

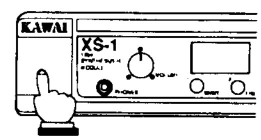
(1) Turn the XS-1's power off.



(2) While holding down the SYS switch and 4 switch and:



(3) Turn the power on.



This operation recalls the factory - preset settings of:

- 32 user SINGLE patch data
- 16 MULTI patch data
- All DRUM parameters
- All SYSTEM parameters (including MIDI TRS & RCV)

NOTE: *If you wish to preserve your original patch data, write all the parameter values down on "SINGLE / MULTI parameter chart" (p. 52), or else store the data onto your sequencer /computer using the DATA DUMP operation (see p. 43 - 45).*

5. TROUBLESHOOTING

Since the XS-1 is equipped with a wide variety of functions depending on the settings, it may not operated as expected. Also, sound may not be output due to improper connection to amplifiers or other equipment. This chart explains troubleshooting for these types of problems.

PROBLEM	POSSIBLE CAUSE	PAGE
No Sound	Is the VOLUME too low?	p.7
	Adjust the volume on the XS-1 or any connected amplifiers or other equipments.	p. 8
	Can sound be heard through headphone when connected? If sound is heard, the problem may be with connected equipment or cords. Check connections.	p.8
	(When in the SINGLE or MULTI PLAY mode) Is the SINGLE's level or SECTION's volume too low?	p. 20 / 30
	(When in the MULTI PLAY mode) Is the SECTION PLAY mode set for OFF (0)?	p.29
Distortion sound	Is the connection to the amplifier's IN secure?	p.8
Pitch is out of tune	Are TRANSPOSE and TUNE set correctly?	p.37
	If the pitch of particular patch is out of tune, check the parameter setting for that patch.	p.29 / 30
No chord produced	Is the SOLO ON / OFF set ON?	p. 21
MIDI data cannot be transmitted or received correctly?	Are the MIDI functions for the transmitting and receiving equipment set correctly?	p.39 - 45

APPENDICES

1. PRESET SOUND CHART

SINGLE- 64 preset patches

1 1 1 PIANO 1	1 2 1 CONDENCER	1 3 1 SPINETT	1 4 1 BELLS
1 1 2 LOW PIANO	1 2 2 RHODOS	1 3 2 CLAVI	1 4 2 SPIELUHR
1 1 3 BRIGHT PIANO	1 2 3 WURL EP	1 3 3 FLUTE	1 4 3 WATER BELL
1 1 4 PIANO 2	1 2 4 DC EP	1 3 4 RECORDER	1 4 4 MALLET
1 1 5 SYN BRASS	1 2 5 PALLAS	1 3 5 TIN WHISTLE	1 4 5 VIBRAPHONE
1 1 6 AC BRASS	1 2 6 E.ORGAN	1 3 6 ALTO	1 4 6 SQR LEAD
1 1 7 OCT BRASS	1 2 7 Bee 52	1 3 7 OBOE	1 4 7 SAW LEAD
1 1 8 LIPS	1 2 8 CHURCH ORGAN	1 3 8 SPINETT	1 4 8 BELLS

1 5 1 SYN BASS	1 6 1 FAT STRINGS	1 7 1 NYLON	1 8 1 ACCORDION
1 5 2 CONTRABASS	1 6 2 NORM STRING	1 7 2 DIST	1 8 2 SITAR
1 5 3 FRETLESS	1 6 3 SPACE STRINGS	1 7 3 BANJO	1 8 3 WATER DREAM
1 5 4 SHARP BASS	1 6 4 FAST STRINGS	1 7 4 WATER DANCE	1 8 4 LUCY
1 5 5 DC BASS	1 6 5 OCT STRINGS	1 7 5 STEELY GTR	1 8 5 PIANO STRING
1 5 6 PULL BASS	1 6 6 W.BASS/VIBE	1 7 6 SYN BASS/STRINGS	1 8 6 STRING VOICE
1 5 7 NORM VOICE	1 6 7 STRINGS/BRASS	1 7 7 E.BASS/CLAVI	1 8 7 BRASS VOICE
1 5 8 CHA CHA	1 6 8 E.BASS/E.PIANO	1 7 8 SYN BASS/VOICE	1 8 8 11 cc

SINGLE - 32 user patches (default)

2 1 1 E.PIANO 1	2 2 1 POP LEAD	2 3 1 FLAGIOLET	2 4 1 BRASS STRINGS
2 1 2 E.PIANO 2	2 2 2 SAW LEAD 2	2 3 2 FUZZ GT	2 4 2 SAW PAD
2 1 3 NAIL BOX	2 2 3 PAN FLUTE	2 3 3 TIN DRUM	2 4 3 SE VOICE
2 1 4 SLAP BASS	2 2 4 VIOLIN	2 3 4 XYLOPHONE	2 4 4 PIANO BRASS 2
2 1 5 WARM BASS	2 2 5 SAW LEAD 3	2 3 5 BELL	2 4 5 BD & TOM
2 1 6 MUTE RELEASE	2 2 6 E.ORGAN 2	2 3 6 SEQ PLUCK 1	2 4 6 HAT
2 1 7 SE BELL	2 2 7 CLARINET	2 3 7 STEEL DRUM	2 4 7 COWBELL
2 1 8 SYNTH SE	2 2 8 SPACE VOX	2 3 8 SEQ PLUCK 2	2 4 8 SNARE

MULTI patches

1 1 1 SEQ1	1 1 2 LAYER1	1 1 3 LAYER2	1 1 4 LAYER3
1 1 5 LAYER4	1 1 6 LAYER5	1 1 7 LAYER6	1 1 8 SEQ2
1 2 1 SPLIT1	1 2 2 SPLIT2	1 2 3 SPLIT3	1 2 4 SPLIT4
1 2 5 SPLIT5	1 2 6 SPLIT6	1 2 7 SPLIT7	1 2 8 E.DRUM

2. DRUM SECTION - Key Assignment

KEY No.	NOTE No.	INSTRUMENT
C1	36	Bass Drum
C#1	37	Rim Shot
D1	38	Snare Drum 1
D#1	39	Hand Clap
E1	40	Snare Drum 2
F1	41	Low Tom
F#1	42	Closed High Hat 1
G1	43	Low Tom
G#1	44	Closed High Hat 2
A1	45	Mid Tom
A#1	46	Open High Hat
B1	47	Mid Tom
C2	48	High Tom
C#2	49	Side Cymbal 1
D2	50	High Tom
D#2	51	Top Cymbal
E2	52	Side Cymbal 2
F2	53	African Bell
F#2	54	Tambourine
G2	55	Splash
G#2	56	High Cowbell
A2	57	Side Cymbal 3
A#2	58	Low Cowbell
B2	59	Agogo
C3	60	High Bongo
C#3	61	Low Bongo
D3	62	Shaker
D#3	63	High Conga
E3	64	Low Conga
F3	65	High Timbale
F#3	66	Low Timbale
G3	67	Claves

3. SINGLE / MULTI Edit Parameters (Blank Chart)

SINGLE patch

	Function		Value
EDIT	9 1	VOLUME	
	9 2	KEY FIX	
	9 3	FIXED KEY NO.	
	9 4	CHORUS ON/OFF	
WAVE	1 0 1	WAVE SELECT	
	1 0 2	SOLO ON/OFF	
FREQ	1 1 1	VIBRATO SPEED	
	1 1 2	VIBRATO DEPTH	
	1 1 3	VIBRATO SHAPE	
	1 1 4	AUTO BEND TIME	
	1 1 5	AUTO BEND DEPTH	
ENV 1	1 2 1	LEVEL	
	1 2 2	ATTACK TIME	
	1 2 3	DECAY TIME	
	1 2 4	SUSTAIN LEVEL	
	1 2 5	RELEASE TIME	
	1 2 6	KS ENVELOPE LEVEL	
	1 2 7	VELOCITY TABLE	
ENV 2	1 3 1	LEVEL	
	1 3 2	ATTACK TIME	
	1 3 3	DECAY TIME	
	1 3 4	SUSTAIN LEVEL	
	1 3 5	RELEASE TIME	
	1 3 6	KS ENVELOPE LEVEL	
	1 3 7	VELOCITY CURVE	

MULTI patch

	Function		Value
SECTION 1	2 1 0	SECTION PLAY	
	2 1 1	SINGLE ASSIGN	
	2 1 2	RECEIVE CHANNEL	
	2 1 3	TUNE	
	2 1 4	LEVEL	
	2 1 5	TRANSPOSE	
	2 1 6	ZONE HI	
	2 1 7	ZONE LO	
SECTION 2	2 2 0	SECTION PLAY	
	2 2 1	SINGLE ASSIGN	
	2 2 2	RECEIVE CHANNEL	
	2 2 3	TUNE	
	2 2 4	LEVEL	
	2 2 5	TRANSPOSE	
	2 2 6	ZONE HI	
	2 2 7	ZONE LO	
SECTION 3	2 3 0	SECTION PLAY	
	2 3 1	SINGLE ASSIGN	
	2 3 2	RECEIVE CHANNEL	
	2 3 3	TUNE	
	2 3 4	LEVEL	
	2 3 5	TRANSPOSE	
	2 3 6	ZONE HI	
	2 3 7	ZONE LO	
SECTION 4	2 4 0	SECTION PLAY	
	2 4 1	SINGLE ASSIGN	
	2 4 2	RECEIVE CHANNEL	
	2 4 3	TUNE	
	2 4 4	LEVEL	
	2 4 5	TRANSPOSE	
	2 4 6	ZONE HI	
	2 4 7	ZONE LO	

4. MIDI DATA FORMAT

1. TRANSMITTED DATA

1st	2nd	3rd	Description	
1011nnnn	00000110	00000vvv	Data Entry	vvv=0~7
1011nnnn	01100100	00000000	RPN LSB	Bender Range
1011nnnn	01100101	00000000	RPN MSB	Bender Range
1100nnnn	0ppppppp	········	Program Chg.	ppppppp =0~95 Single "111" ~ "248" ppppppp =96~111 Multi "111" ~ "128"
11111110	········	········	Active Sensing	

nnnn = Channel Number
RPN = Registered Parameter Number

2. RECOGNIZED RECEIVED DATA

1st	2nd	3rd	Description	
1000nnnn	0kkkkkkk	0vvvvvvv	Note off	kkkkkkk = 12~ 120 vvvvvvv = ignore
1001nnnn	0kkkkkkk	0vvvvvvv	Note on/off	kkkkkkk = 12~120 vvvvvvv = 1~127 Note on vvvvvvv = 0 Note off
1011nnnn	00000001	0vvvvvvv	Modulation	vvvvvvv = 0~127
1011nnnn	00000110	00000vvv	Data Entry	vvv = 0~7 (over 8 ignored)
1011nnnn	00000111	0vvvvvvv	Volume	vvvvvvv = 0~127
1011nnnn	01000000	0vvvvvvv	Hold 1 sw	vvvvvvv = 0~63 off vvvvvvv = 64~127 on
1011nnnn	01100100	00000000	RPN LSB	Bender Range lo
1011nnnn	01100101	00000000	RPN MSB	Bender Range hi
1100nnnn	0pppppp	········	Program Chg.	ppppppp = 0~95 Single "111" ~ "248" ppppppp = 96~111 Multi "111" ~ "128" ppppppp = 112~127 ignored
1110nnnn	00000000	0vvvvvvv	Pitch Bender	vvvvvvv = 0~127
1011nnnn	01111011	00000000	All Notes off	
1011nnnn	01111100	0000000C	OMNI off	
1011nnnn	01111101	00000000	OMNI on	
11111110	········	········	Active Sensing	

nnnn = Channel Number
RPN = Registered Parameter Number

3. EXCLUSIVE DATA FORMAT

KAWAI FORMAT

Following is the exclusive data format of the XS-1, and is based on the "KAWAI MIDI EXCLUSIVE FORMAT"

XS-1 MIDI EXCLUSIVE FORMAT

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	0fffffff		
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub1	0sssssss		Sub command 1
Sub2	0sssssss		Sub command 2
data	0xxxxxxx		
data	0xxxxxxx		
·			
·			
·			
data	0xxxxxxx		
data	0xxxxxxx		
EOX	11110111	F7H	

The exclusive data is received only when the system MIDI RCV parameter 4-7 (exclusive on/off) = 1.
Function no., Sub1 and Sub2 are listed in 9. EXCLUSIVE FUNCTION TABLE.

4. EXCLUSIVE TRANSMITTED DATA

4-1. ONE SINGLE/MULTI DATA DUMP

This message is transmitted from XS-1 when system TRS parameter (5-3) is set, or after receiving the ONE SINGLE/MULTI DATA REQ.
See SINGLE/MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	0xxxxxxx		64~95 SINGLE "211" ~ "248" 96~111 MULTI "111" ~ "128"
data	0xxxxxxx		patch data s0/m0
data	0xxxxxxx		patch data s1/m1
data	0xxxxxxx		patch data s2/m2
·			
·			
·			
data	0xxxxxxx		patch data s22/m37
data	0xxxxxxx		patch data s23/m38
data	0xxxxxxx		patch data s24/m39
EOX	11110111	F7H	

4-2. DRUM DATA DUMP

This message is transmitted from XS-1 when system TRS parameter (5-6) is set, or after receiving the ONE DRUM DATA REQ.
See DRUM DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000001	01H	drum
Sub status 2	00000000	00H	
data	0xxxxxxx		patch data d0
data	0xxxxxxx		patch data d1
data	0xxxxxxx		patch data d2
•			
•			
•			
data	0xxxxxxx		patch data d62
data	0xxxxxxx		patch data d63
data	0xxxxxxx		patch data d64
EOX	11110111	F7H	

4-3. BLOCK SINGLE DATA DUMP

This message is transmitted from XS-1 when system TRS parameter (5-4) is set, or after receiving the ALL SINGLE DATA REQ.
See SINGLE DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	single/multi
Sub status 2	01000000	40H	all singles
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
•			
•			
•			
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"211" s24 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
•			
•			
•			
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
data	0xxxxxxx		"212" s24 data
	"213" Patch data		
	"214" Patch data		
	"215" Patch data		
	•		
	•		
	•		
	"246" Patch data		
	"247" Patch data		
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
•			
•			
•			
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"248" s24 data
EOX	11110111	F7H	

4-4. BLOCK MULTI DATA DUMP

This message is transmitted from XS-1 when system TRS parameter (5-5) set, or after receiving the ALL MULTI DATA REQ.
See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	single/multi
Sub status 2	01100000	60H	all multis
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
•			
•			
•			
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m3 data
•			
•			
•			
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
	"113" Patch data		
	"114" Patch data		
	"115" Patch data		
	•		
	•		
	•		
	"126" Patch data		
	"127" Patch data		
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
•			
•			
•			
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

4-5. ALL PATCH DATA DUMP

This message is transmitted when "ALL PATCH DATA REQUEST" is received. XS-1 transmits all singles at first and all multi and drum.
See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100010	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	00000000	00H	
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
.			
.			
.			
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"248" s24 data
data	0xxxxxxx		"111" M0 data
data	0xxxxxxx		"111" M1 data
data	0xxxxxxx		"111" M2 data
data	0xxxxxxx		"111" M3 data
.			
.			
.			
data	0xxxxxxx		DRUM d0 data
data	0xxxxxxx		DRUM d1 data
data	0xxxxxxx		DRUM d2 data
data	0xxxxxxx		DRUM d3 data
.			
.			
.			
data	0xxxxxxx		DRUM d61 data
data	0xxxxxxx		DRUM d62 data
data	0xxxxxxx		DRUM d63 data
data	0xxxxxxx		DRUM d64 data
EOX	11110111	F7H	

5. EXCLUSIVE RECOGNIZED RECEIVED DATA

5-1. ONE SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	0bbbbbbb		64~95 SINGLE "211" ~ "248" 96~111 MULTI "111" ~ "128"
EOX	11110111	F7H	

5-2. ONE DRUM DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000001	01H	drum
Sub status 2	00000000	00H	
EOX	11110111	F7H	

5-3. BLOCK SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no	0000nnnn	0nH	
Function no.	00000001	01H	Block patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	0xx00000	40H	single
		60H	multi
EOX	11110111	F7H	

5-4. ALL DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000020	02H	all block data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	00000000	00H	
EOX	11110111	F7H	

5-5. ONE SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	0xxxxxxx		64~95 SINGLE "211" ~"248" 96~111 MULTI "111" ~"128"
data	0xxxxxxx		patch data s0/m0
data	0xxxxxxx		patch data s1/m1
data	0xxxxxxx		patch data s2/m2
.			
.			
.			
data	0xxxxxxx		patch data s22/m37
data	0xxxxxxx		patch data s23/m38
data	0xxxxxxx		patch data s24/m39
EOX	11110111	F7H	

5-6. DRUM DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no	00000101	05H	XS-1 ID no.
Sub status1	00000001	01H	drum
Sub status 2	00000000	00H	
data	0xxxxxxx		patch data d0
data	0xxxxxxx		patch data d1
data	0xxxxxxx		patch data d2
.			
.			
.			
data	0xxxxxxx		patch data d61
data	0xxxxxxx		patch data d62
data	0xxxxxxx		patch data d63
data	0xxxxxxx		patch data d64
EOX	11110111	F7H	

5-7. BLOCK SINGLE DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	01000000	40H	all singles
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
• • •			
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"211" s24 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
• • •			
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
data	0xxxxxxx		"212" s24 data
"213"	Patch data		
"214"	Patch data		
"215"	Patch data		
• • •			
"246"	Patch data		
"247"	Patch data		
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
• • •			
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"248" s24 data
EOX	11110111	F7H	

5-8. BLOCK MULTI DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	01100000	60H	all multis
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
• • •			
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m3 data
• • •			
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
"113"	Patch data		
"114"	Patch data		
"115"	Patch data		
• • •			
"126"	Patch data		
"127"	Patch data		
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
• • •			
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

5-9. ALL PATCH DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100010	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	XS-1 ID no.
Sub status1	00000000	00H	
Sub status 2	00000000	00H	
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
•			
•			
•			
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"248" s24 data
data	0xxxxxxx		"111" M0 data
data	0xxxxxxx		"111" M1 data
data	0xxxxxxx		"111" M2 data
data	0xxxxxxx		"111" M3 data
•			
•			
•			
data	0xxxxxxx		"128" M36 data
data	0xxxxxxx		"128" M37 data
data	0xxxxxxx		"128" M38 data
data	0xxxxxxx		"128" M39 data
data	0xxxxxxx		DRUM d0 data
data	0xxxxxxx		DRUM d1 data
data	0xxxxxxx		DRUM d2 data
data	0xxxxxxx		DRUM d3 data
•			
•			
•			
data	0xxxxxxx		DRUM d61 data
data	0xxxxxxx		DRUM d62 data
data	0xxxxxxx		DRUM d63 data
data	0xxxxxxx		DRUM d64 data
EOX	11110111	F7H	

6. SINGLE DATA LIST

No.	BYTE	PARAMETER NAME	DESCRIPTION
S00	00nnnnnn	vol	0~63
S01	0nnnnnnn	wave	0~127 / 1~128
S02	0000000n	solo	1 : on / 0 : off
S03	000nnnnn	vib speed	0~31
S04	000nnnnn	vib dep	0~31
S05	000000nn	vib shape	0~3
S06	000nnnnn	a. bend time	0~31
S07	00nnnnnn	a. bend depth	0~62/0~±31 (0 = 31)
S08	000nnnnn	dco1 level	0~31
S09	000nnnnn	dco1 attack	0~31
S10	000vvvvv	dco1 decay	0~31
S11	000eeeee	dco1 sustain	0~31
S12	000sssss	dco1 release	0~31
S13	000sssss	dco1 ks depth	0~30 / 0~±15 (0 = 15)
S14	000000pp	dco1 velo curve	0~3
S15	00011111	dco2 level	0~31
S16	000aaaaa	dco2 attack	0~31
S17	000ddddd	dco2 decay	0~31
S18	000sssss	dco2 sustain	0~31
S19	000r r r r r	dco2 release	0~31
S20	000kkkkk	dco2 ks depth	0~30 / 0~±15 (0 = 15)
S21	000000pp	dco2 velo curve	0~3
S22	0000000a	fix key	1 : on / 0 : off
S23	0ddddddd	fix key no.	24~108
S24	00000000	dummy	0

7. MULTI DATA LIST

No.	BYTE	PARAMETER	DESCRIPTION
<sec. 1>			
M0	000000nn	section play	0 / off, 1 / on
M1	0nnnnnnn	single	0~95 / "111" ~"248"
M2	0000nnnn	rcv. ch.	0~15 / 1~16
M3	000nnnnn	tune	0~20 / 0~±10 (0 = 10)
M4	000nnnnn	level 1	0~31
M5	000nnnnn	transpose	0~24 / 0~±12 (0 = 12)
M6	0nnnnnnn	zone hi	36~96
M7	0nnnnnnn	zone lo	36~96
M8	00000000	dummy	0
M9	00000000	dummy	0
<sec. 2>			
M10	000000nn	section play	0 / off, 1 / on
M11	0nnnnnnn	single	0~95 / "111" ~"248"
M12	0000nnnn	rcv. ch.	0~15 / 1~16
M13	000nnnnn	tune	0~20 / 0~±10 (0 = 10)
M14	000nnnnn	level 1	0~31
M15	000nnnnn	transpose	0~24 / 0~±12 (0 = 12)
M16	0nnnnnnn	zone hi	36~96
M17	0nnnnnnn	zone lo	36~96
M18	00000000	dummy	0
M19	00000000	dummy	0
<sec. 3>			
M20	000000nn	section play	0 / off, 1 / on
M21	0nnnnnnn	single	0~95 / "111" ~"248"
M22	0000nnnn	rcv. ch.	0~15 / 1~16
M23	000nnnnn	tune	0~20 / 0~±10 (0 = 10)
M24	000nnnnn	level 1	0~31
M25	000nnnnn	transpose	0~24 / 0~±12 (0 = 12)
M26	0nnnnnnn	zone hi	36~96
M27	0nnnnnnn	zone lo	36~96
M28	00000000	dummy	0
M29	00000000	dummy	0
<sec. 4>			
M30	000000nn	section play	0 / off, 1 / on
M31	0nnnnnnn	single	0~95 / "111" ~"248"
M32	0000nnnn	rcv. ch.	0~15 / 1~16
M33	000nnnnn	tune	0~20 / 0~±10 (0 = 10)
M34	000nnnnn	level 1	0~31
M35	000nnnnn	transpose	0~24 / 0~±12 (0 = 12)
M36	0nnnnnnn	zone hi	36~96
M37	0nnnnnnn	zone lo	36~96
M38	00000000	dummy	0
M39	00000000	dummy	0

8. DRUM DATA LIST

No.	BYTE	PARAMETER	DESCRIPTION
<COMMON>			
d00	0000cccc	volume	0~31
d01	000vvvvv	C1 drum no.	0~31
d02	000vvvvv	C1 drum level	0~31
d03	000vvvvv	C#1 drum no.	0~31
d04	000vvvvv	C#1 drum level	0~31
d05	000vvvvv	D1 drum no.	0~31
d06	000vvvvv	D1 drum level	0~31
d07	000vvvvv		0~31
d08	000vvvvv		0~31
d09	000vvvvv		0~31
d10	000vvvvv		0~31
	•		
	•		
d61	000vvvvv	F#3 drum no.	0~31
d62	000vvvvv	F#3 drum level	0~31
d63	000vvvvv	G3 drum no.	0~31
d64	000vvvvv	G3 drum level	0~31

9. EXCLUSIVE FUNCTION TABLE

FUNCTION	FUNCTION No.	SUB CMND 1	SUB CMND 2	DESCRIPTION	TRS	RCV
One Patch Dump Request	0 (00H)	0 0 1	64 ~ 95 96 ~ 111 0	ONE SINGLE DATA REQUEST ONE MULTI DATA REQUEST ONE DRUM DATA REQUEST	× × ×	○ ○ ○
Block Patch Dump Request	1 (01H)	0 0	64 96	ALL SINGLE DATA REQUEST ALL MULTI DATA REQUEST	× ×	○ ○
All Patch Dump Request	2 (02H)	0	0	ALL DATA REQUEST	×	○
One Patch Data Dump	32 (20H)	0 0 1	64 ~ 95 96 ~ 111 0	ONE SINGLE DATA DUMP ONE MULTI DATA DUMP ONE DRUM DATA DUMP	○ ○ ○	○ ○ ○
Block Patch Data Dump	32 (21H)	0 0	64 96	ALL SINGLE DATA DUMP ALL MULTI DATA DUMP	○ ○	○ ○
All Patch Data Dump	34 (22H)	0	0	ALL DATA DUMP	○	○

10. PROGRAM NO. CONVERT TABLE

<SINGLE PRESET>

※	"11※"		"12※"		"13※"		"14※"		"15※"		"16※"		"17※"		"18※"	
1	0	00H	8	08H	16	10H	24	18H	32	20H	40	28H	48	30H	56	38H
2	1	01H	9	09H	17	11H	25	19H	33	21H	41	29H	49	31H	57	39H
3	2	02H	10	0AH	18	12H	26	1AH	34	22H	42	2AH	50	32H	58	3AH
4	3	03H	11	0BH	19	13H	27	1BH	35	23H	43	2BH	51	33H	59	3BH
5	4	04H	12	0CH	20	14H	28	1CH	36	24H	44	2CH	52	34H	60	3CH
6	5	05H	13	0DH	21	15H	29	1DH	37	25H	45	2DH	53	35H	61	3DH
7	6	06H	14	0EH	22	16H	30	1EH	38	26H	46	2EH	54	36H	62	3EH
8	7	07H	15	0FH	23	17H	31	1FH	39	27H	47	2FH	55	37H	63	3FH

<SINGLE USER>

※	"21※"		"22※"		"23※"		"24※"	
1	64	40H	72	48H	80	50H	88	58H
2	65	41H	73	49H	81	51H	89	59H
3	66	42H	74	4AH	82	52H	90	5AH
4	67	43H	75	4BH	83	53H	91	5BH
5	68	44H	76	4CH	84	54H	92	5CH
6	69	45H	77	4DH	85	55H	93	5DH
7	70	46H	78	4EH	86	56H	94	5EH
8	71	47H	79	4FH	87	57H	95	5FH

<MULTI USER>

※	"11※"		"12※"	
1	96	60H	104	68H
2	97	61H	105	69H
3	98	62H	106	6AH
4	99	63H	107	6BH
5	100	64H	108	6CH
6	101	65H	109	6DH
7	102	66H	110	6EH
8	103	67H	111	6FH

5. WAVE LIST

1 PIANO & PIANO
2 PIANO & PIANO
3 PIANO & PIANO
4 PIANO & PIANO
5 PIANO & PIANO
6 PIANO & PIANO
7 PIANO & RIDE
8 PIANO & PIANO E
9 PIANO & PIANO E
10 PIANO E & PIANO E
11 PIANO E & PIANO E
12 PIANO E & RIDE
13 BASS &BASS E
14 BASS E & BASS SYN
15 BASS E & BASS SYN
16 BASS E & BASS WOOD
17 BASS E & GUITAR A
18 BASS E & PRG
19 BASS SYN & BASS SYN
20 BASS SYN & RANDOM
21 BASS SYN & GUITAR A
22 BASS SYN & CONGA
23 BASS SYN & SD H
24 BASS WOOD & BASS WOOD
25 BASS WOOD & BASS WOOD
26 BASS WOOD & GUITAR A
27 GUITAR A & GUITAR A
28 GUITAR A & GUITAR FUZZ
29 GUITAR A & CONGA
30 GUITAR A & SD H
31 GUITAR FUZZ & GUITAR FUZZ
32 STRINGS & STRINGS 1
33 STRINGS & STRINGS 2
34 STRINGS & STRINGS 3
35 STRINGS & STRINGS 4
36 STRINGS & VOICE
37 STRINGS & VOICE
38 STRINGS & CRASH
39 STRINGS & RIDE
40 VIBRAPHONE
41 VOICE & VOICE
42 VOICE & CRASH
43 VOICE & RIDE
44 BRASS AC & BRASS AC
45 BRASS AC & BRASS AC
46 BRASS AC & PIANO
47 BRASS AC & PIANO E
48 BRASS SYN & PIANO HI
49 BRASS AC & CRASH
50 BRASS AC & RIDE
51 BRASS SYN & BRASS SYN
52 BRASS SYN & PIANO E
53 BRASS SYN & PRG
54 FLUTE & FLUTE
55 FLUTE & BASS AC
56 FLUTE & BASS E
57 FLUTE & GUITAR A
58 FLUTE & SD H
59 DC SYN 1 & 2
60 DC SAW 1
61 DC SAW 2
62 DC SAW 3
63 DC SAW & RANDOM
64 DC TRIANGLE
65 DC BASS FRETLESS
66 DC BASS FRETLESS & BASS SLAP
67 DC BASS FRETLESS & ORGAN
68 DC GUITAR A
69 DC GUITAR E
70 DC GUITAR A & GUITAR E
71 DC GUITAR E & GUITAR A
72 DC GUITAR E & GUITAR DIST
73 DC GUITAR A & GUITAR DIST
74 DC HARP
75 DC CLAVI & SQR H
76 DC SQR LEAD
77 DC SQR LEAD & RANDOM
78 DC ORGAN E1
79 DC ORGAN E1 & ORGAN E2
80 DC ORGAN E2
81 DC ORGAN E2 & ORGAN E1
82 DC BIG PIPE & FLUTE
83 DC FLUTE & BIG PIPE
84 DC ORGAN BIG PIPE
85 DC CLAVI
86 DC HARPSICHORD
87 DC HARPSICHORD & RANDOM
88 DC PIANO E
89 DC PIANO E & MALLET
90 DC PIANO E & RANDOM
91 DC BELL
92 DC PIANO E & MALLET
93 DC MALLET
94 DC STEEL DRUM
95 DC STEEL DRUM & RANDOM
96 DC VIBE
97 DC VIBE & RANDOM
98 DC VIOLIN
99 DC VIOLIN & RANDOM
100 DC HARMONICA
101 DC HARMONICA & RANDOM
102 DC CLARINET
103 DC OBOE
104 DC OBOE & RANDOM
105 DC SAX
106 DC SAX & RANDOM
107 DC SAX
108 SE PIANO & COWBELL
109 SE PIANO & PIANO
110 SE STRINGS & BRASS AC
111 SE STRINGS & PIANO
112 SE STRINGS & PIANO E
113 SE STRINGS & PIANO E(L)
114 SE VOICE & BRASS AC
115 SE VOICE & PIANO E
116 SE BASS SYN & BD
117 SE SE PRG & RANDOM
118 SE DC OMNI
119 DR RIDE & CRASH
120 SP BASS E & CLAVI
121 SP BASS E & PIANO E
122 SP BASS SYN & STRINGS
123 SP BASS SYN & VOICE
124 SP BASS WOOD & VIB
125 SP STRINGS & BRASS AC
126 SP VOICE & BRASS AC
127 SP VOICE & BRASS SYN
128 10 SPLIT REV DRUM

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[SYNTHESIZER MODULE]
Model : XS-1

MIDI Implementation Chart

Date : Sept. , 1991
Version 1.0

Function...		Transmitted	Received	Received (Drum Section)	Remarks
Basic Channel	: Default : Changed	1 - 16 1 - 16	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	: Default : Message : Altered	3 × ***	1, 3 OMNI ON/OFF ×	3 × ×	
Note Number	: True Voice	× ***	12 - 120 12 - 120	36 - 67 36 - 67	
Velocity	: Note ON : Note OFF	× ×	○ ×	○ ×	
After Touch	: Key's : Ch's	× ×	× ×	× ×	
Pitch Bend		×	*1	×	
Control Change	1 6 7 64 100, 101	*1 ○ × × ○*2	*1 ○ *1 *1 ○*2	× × *1 × ×	Modulation Data Entry Volume Hold 1 RPN LSB, MSB
Program Change	: True No.	*1 0 - 111 ***	*1 0 - 111	×	
Exclusive		○	*1	×	
System Common	: Song Pos : Song Sel : Tune	× × ×	× × ×	× × ×	
System Real Time	: Clock : Commands	× ×	○ ×	× ×	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	× × ○ ×	× ○(123 - 127) ○ ×	× × × ×	
Notes		*1 = Can be set ○ or ×. *2 = RPN#1: Recognizes Pitch Bend Sensitivity.			

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

SPECIFICATIONS

■ **WAVEFORMS:**	16bit PCM + 16bit DC (Digital Cyclic)
■ **POLYPHONY :**	10 (SINGLE / MULTI) + 4 (DRUM SECTION)
■ **PROGRAM MEMORY :**	SINGLE patches: 96 (64 preset + 32 user) MULTI patches : 16 DRUM SECTION : 32 Sounds
■ **MULTI CAPABILITY :**	4 SECTIONs + DRUM SECTION
■ **SINGLE EDIT :**	• Volume, Key Fix, Fixed Key No. • Wave Select, Solo On / Off • Vibrato Speed, Vibrato Depth, Vibrato Shape, Auto Bend Time, Auto Bend Depth • Level, Attack Time, Decay Time, Sustain Level, Release Time, KS Envelope Level, Velocity Curve
■ **MULTI EDIT :**	SECTION Play, SINGLE Assign, Receive Channel, Level, Tune, Transpose, Zone Hi, Zone Lo
■ **DRUM EDIT :**	DRUM Volume, DRUM SECTION Receive Channel
■ **JACKS :**	DC IN, LINE OUT (R, L / MONO), HEADPHONES, MIDI IN / OUT / THRU
■ **DISPLAY :**	8 Segment LED x 3
■ **DIMENSIONS :**	219 x 189 x 44 (mm)
■ **WEIGHT :**	1.0 (kg)

KAWAI

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